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# ACORN USER

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**September 1998**

## • regulars



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Check it out at:
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Next month in **Acorn User**
**What have a spaceship and Acorn in common? More on RISC history plus CD writers reviewed and knitting!**
**Next issue** on sale 3 September 1998

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## PHOEBE 2100 (min. spec.) SA233, 128MB, 8.4Gb Hd, 32x CD £100 deposit (£1495 + vat)

## **** Save upto £500.00 on a SA RiscPC System, call for details ****

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As above with 17" monitor £1645.00 + VAT

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Offer ends 30th August 1998

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|---|---|
| A7000 8Mb /net base | £449+ vat |
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| A7000 8Mb /net/14" mon | £549+ vat |
| A7000 8Mb /1Gb/14" mon | £549+ vat |
| A7000 8Mb /net/Hd/14"mon | £599+ vat |

### A7000+ System Offers

A7000 +16M / 1.2G / 8xCD /15" mon & Stereo Spk for only £969 inc VAT

### RiscPC PC Cards

With RiscPC or Separately

| | |
|---|---|
| DX2-66 | £149.00 inc VAT |
| DX4-100 | £233.99 inc VAT |
| 586-100 (Acorn) | £350.99 inc VAT |
| 586-133 (CTA) | £350.99 inc VAT |
| **586-133 (CJE 512)** | **£350.00 inc VAT** |

### MONITORS Sale now on

| | Ex. VAT | Inc. VAT |
|---|---|---|
| 14" SVGA 0.28 (3yr on-site) | £95.00 | £111.63 |
| 15" SVGA 0.28 (Special) | £100.00 | £117.50 |
| 15" SVGA 0.28 (3yr on-site) | £125.00 | £146.88 |
| 15" SVGA 0.28 Multi-Media | £170.00 | £199.75 |
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| 21" Iiyama Pro (A102GT) | £870.00 | £1022.00 |
| AKF18 Multisync | £115.00 | £135.13 |
| AKF53 Multisync (14") | £165.00 | £193.88 |
| **AKF50 Multi-sync (14")** | **£199.00** | **£233.83** |
| Multisync A300/3000 cable | £8.50 | £9.99 |

### THE BEST! PRINTER PRICES

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|---|---|---|---|
| Canon BJC80W portable col. | | £159.00 | £186.83 |
| Canon BJC 250 **NEW** | A4 | £84.00 | £98.70 |
| **Canon BJC 620 colour** | **A4** | **£185.00** | **£157.45** |
| **Canon BJC 4300 colour** | **A4** | **£110.00** | **£129.25** |
| **Canon BJC 4650 colour** | **A3** | **£227.00** | **£266.73** |
| **Photo drivers for 4200/4550** | | **£58.72** | **£69.00** |
| Epson Stylus 400 colour | A4 | £115.00 | £135.13 |
| **Epson Stylus 600 Colour** | **A4** | **£149.00** | **£175.08** |
| Epson Stylus 800 Colour | A4 | £230.00 | £270.25 |
| Epson Stylus 1520 Colour | A3 | £569.00 | £668.58 |
| HP 400 L **Special** | A4 | £79.00 | £92.83 |
| HP 670C Colour | A4 | £119.00 | £139.83 |
| HP 690C Colour PLUS | A4 | £136.00 | £159.80 |
| HP 890C Colour | A4 | £217.00 | £254.98 |
| **HP LASERJET 6L** | | **£249.00** | **£292.58** |
| HP LASERJET 6P | | £494.00 | £580.45 |

***FREE Acorn driver by request***

## IDE HARD DRIVES AND SUB-SYSTEMS *WHY PAY MORE???*

**A3000/A3010 Hard drives**

| | Ex. VAT | Inc. VAT |
|---|---|---|
| Internal 60/85 Mb | £ 99 | £116.33 |
| Internal 170 Mb | £109 | £128.08 |
| Internal 340 Mb | £129 | £151.58 |
| **Internal 512 Mb** | £139 | £163.33 |
| Internal 850 Mb | **£149** | **£175.08** |
| Internal 1 Gb | £159 | £186.83 |
| Internal 2 Gb | £179 | £210.33 |
| **Internal 3 Gb** | **£179** | **£210.33** |

External A3000 add £20.00 +VAT **includes CD ROM interface**

**A3020 Hard drives**

| | Ex. VAT | Inc. VAT |
|---|---|---|
| 85Mb | £49 | £57.58 |
| 170Mb | £59 | £69.33 |
| 340Mb | £79 | £92.83 |
| **512Mb** | **£89** | **£104.58** |
| 850 Mb * | £149 | £175.08 |
| 1 Gb * | £159 | £186.83 |
| 2 Gb * | £179 | £210.33 |
| **3 Gb *** | **£179** | **£210.33** |

* includes CD ROM interface For partioning software only deduct £25.00 + vat (29.38)

**A4000/A5000/A400**

| | Ex.VAT | Inc. VAT |
|---|---|---|
| **420Mb *** | **£76** | **£89.30** |
| **540Mb *** | **£90** | **£105.75** |
| **700Mb *** | **£93** | **£109.28** |
| **1.0Gb *** | **£110** | **£129.25** |
| **2.1Gb *** | **£130** | **£152.75** |
| 3.2Gb * | £140 | £164.50 |
| **4.0Gb *** | **£155** | **£182.13** |

* inc. internal removable HD & CD ROM i/f
For partioning software only deduct £25.00 + vat (29.38)

**RPC/A7000**

| | Ex. VAT | Inc. VAT |
|---|---|---|
| **512Mb** | **£65** | **£76.38** |
| **1.2Gb** | **£70** | **£82.25** |
| 1.7Gb | £75 | £88.13 |
| **2.1Gb** | **£85** | **£99.88** |
| 3.2Gb | £95 | £111.63 |
| **4.3Gb** | **£105** | **£123.38** |
| **6.4Gb** | **£125** | **£152.75** |
| **8.4Gb** | **£160** | **£188.00** |
| **9.1 Gb** | **£200** | **£235.00** |
| **12G 5.25** | **£225** | **£264.38** |

## CD-ROMS

| | IDE internal | | IDE external | | SCSI internal | | SCSI external | |
|---|---|---|---|---|---|---|---|---|
| 32 x | £55.00 | (£64.63 | £105.00 | (£123.38) | £80.00 | (£94.00) | £130.00 | (£152.75) |
| 24 x | £45.00 | (£52.88) | £95.00 | (£111.63) | £75.00 | (£88.13) | £125.00 | (£146.88) |
| 16 x | £39.00 | (£45.83) | £89.00 | (£104.58) | £55.00 | (£64.63) | £105.00 | (£123.38) |
| 12 x | £39.00 | (£45.83) | £89.00 | (£104.58) | £45.00 | (£52.88) | £95.00 | (£111.63) |
| 8 x | £34.00 | (£39.95) | £84.26 | (£99.00) | £34.00 | (£39.95) | £84.26 | (£99.00) |

EXTERNAL IDE REQUIRE SUITABLE I/F (3.5 driver £15+ vat) IDE int. fitting kit £5 inc.

**EXT SCSI includes SCSI I cable, SCSI II cable £5 (£5.87) extra.** SCSI fitting kits from £10 + vat

## SCSI HARD DRIVES

| | | |
|---|---|---|
| 1.0Gb (New Stock) | £80.00 | (£94.00) |
| 2Gb (limited Stock) | £115.00 | (£135.13) |
| 2Gb (7200rpm) | £130.00 | (£152.75) |
| 4.3Gb (5400 or 7200rpm) | £170.00 | (£199.75) |
| 4.3Gb (10,000rpm) | £385.00 | (£452.38) |
| 6.4Gb | £240.00 | (£282.00) |
| 9.1Gb (7200rpm) | £350.00 | (£411.25) |
| 9.1Gb 10,000rpm from | £525.00 | (£616.88) |

## REMOVABLE HARD DRIVES

Panasonic PD / CD-ROM from £139.00 + Vat

| | IDE internal | | IDE external | | SCSI internal | | SCSI external | | Parallel PC /Mac | | Parallel ACORN | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Zip 100 | £79.00 | (£92.83) | £129.00 | (£151.58) | £100.00 | (£117.50) | £100.00 | (£117.50) | £100.00 | (£117.50) | £115.00 | (£135.13) |
| Ezflyer 230 | £100.00 | (£117.50) | £150.00 | (£176.25) | £100.00 | (£117.50) | £85.00 | (£99.88) | £100.00 | (£117.50) | £149.00 | (£175.08) |
| Nomai 750 | | | | | £165.00 | (£193.88) | £215.00 | (£252.63) | | | | |
| Jaz 1Gb | | | | | £189.00 | (£222.08) | £199.00 | (£233.83) | £239.00 | (£280.83) | £249.00 | (£292.58) |
| Syjet 1.5G | £219.00 | (£257.33) | £269.00 | (£316.08) | £219.00 | (£257.33) | £269.00 | (£316.08) | £279.00 | (£327.83) | £279.00 | (£327.83) |
| Jaz 2Gb | £360.00 | (£423.00) | £410.00 | (£481.75) | £360.00 | (£423.00) | £410.00 | (£481.75) | £450.00 | (£528.75) | £460.00 | (£540.50) |

** REMOVABLE IDE REQUIRE SUITABLE INTERFACE . EXTERNAL SCSI INCLUDE SCSI 1 CABLE , SCSI II CABLE £5.00+VAT EXTRA

## Removable Drive Media

| | Ex. VAT | Inc.VAT |
|---|---|---|
| 100mb Zip | £8.45 | £9.93 |
| Zip 5 pack | £38.30 | £45.00 |
| 120mb LS120 | £7.50 | £8.81 |
| 135 Syquest | £21.00 | £24.68 |
| 230 Syquest | £19.90 | £23.38 |
| 270 Syquest | £33.00 | £38.77 |
| 650Mb Pan. PD | £19.00 | £22.33 |
| 750Mb Nomai | £38.00 | £44.65 |

| | Ex. VAT | Inc.VAT |
|---|---|---|
| 1Gb Jazz | £58.00 | £68.15 |
| 1.5Gb Syquest | £58.00 | £68.15 |
| CDR CD-ROM | £1.28 | £1.50 |
| CDR 10 pack | £10.00 | £11.75 |
| CDR 25 pack | £21.28 | £25.00 |
| CDR/W CDROM | £12.00 | £14.10 |
| CDR/W 10 pack | £100.00 | £117.50 |

## Interface Adapters

| | | |
|---|---|---|
| Storm SCSI 8 bit (A30x0 int) | £88.00 | £103.40 |
| Storm SCSI 16 bit (podule) | £96.00 | £112.80 |
| Storm SCSI 32 bit (podule) | £128.00 | £150.40 |
| Powertec SCSI3 32 bit (Pod) | £155.00 | £182.13 |
| Simtec 8 bit (A3000/A3010) | £55.00 | £64.63 |
| Simtec 16 bit (AX00/A5000/RPC) | £42.55 | £50.00 |
| ADPL (ICS)16 bit DMA | £46.81 | £55.00 |
| RapIDE32 | £119.00 | £139.83 |

Removable IDE or SCSI Housing Unit £20.00 (£23.50)

## COLOUR SCSI SCANNERS

| | |
|---|---|
| **P'llel A4 600dpi inc Acorn s/w** | **£99.00 (£116.33)** |
| **Mustek A4 600dpi inc Acorn s/w** | **£119.00 (£139.83)** |
| **Mustek *A4 1200dpi* inc Acorn s/w** | ***£169.00 (£198.58)*** |
| Imagemaster & Twain for above | £49.00 (£57.58) |
| **Epson p'llel A4 600dpi inc Acorn s/w** | **£170.00 (£199.75)** |
| **Epson SCSI A4 600dpi inc Acorn s/w** | **£229.00 (£269.08)** |

### 6 Drive CD-ROM SCSI Towers

8x £339.00 exc.
16x £459.00 exc.
32x £579.00 exc.

### StrongARM Special Offer

£259.00 inc VAT
(with any Hard Drive / Memory purchase)

## FLOPPY DISKS @20p !!

| | Ex. VAT | Inc.VAT |
|---|---|---|
| DD Re-label Acorn fmt 10 pk | £2.00 | £2.35 |
| DD Re-label Acorn fmt 100 pk | £17.02 | £20.00 |
| DD Branded box10 pack | £2.50 | £2.94 |
| DD Branded box 10x 10 pack | £21.28 | £25.00 |
| HD Re-label Acorn fmt 10 pk | £2.00 | £2.35 |
| HD Re-label Acorn fmt 100 pk | £17.02 | £20.00 |
| HD bulk 10 pack | £2.00 | £2.35 |
| HD bulk 100 pack | £17.02 | £20.00 |
| HD Branded 10 pack | £3.50 | £4.11 |
| **20 cap Disk Box** | **£1.69** | **£2.00** |
| **40 cap Disk Box** | **£2.54** | **£2.98** |
| **100 cap Disk Box** | **£2.98** | **£3.50** |

**Printer Ribbons, Inkjet Cartridges, New/Recycled Laser Toner Carts**
**Prices available on request**

## CD-ROM WRITERS



Prices Start from £185.00 +

| | |
|---|---|
| 2x6x Writer | £185.00 (£217.37) |
| 2x2x6x Re-Writer | £230.00 (£270.25) |
| 4x2x6x Re-Writer | £275.00 (£323.13) |
| **CD-BURN for above** | **£50.00 £58.75** |

## Digital Cameras

| | Ex VAT | Inc VAT |
|---|---|---|
| QV11a (PC Software) | £170 | £199.75 |
| QV11a (Acorn SW) | £260 | £305.50 |
| Qv11a/Qv100 s/w kit | £96 | £112.80 |

### Casio QV100a Digital Camera

**PC s/w only £212.00 exc vat (£249.10)**
**Acorn & PC s/w £340.00 exc (£399.50)**

## POWERED SPEAKERS

| | Ex. VAT | Inc. VAT |
|---|---|---|
| 50 watts with PSU | £16.98 | £19.95 |
| **240 watts with PSU** | **£24.68** | **£29.00** |
| Subwoofer system with PSU | £42.00 | £49.35 |

**We can repair/upgrade your machine(s) and monitors at competitive prices please ask**
All Acorn's including BBCs & PCs

# 3 yr Warranty on ALL Acorn MEMORY *why Pay More??*

## ACORN MEMORY

| | Ex. VAT | Inc. VAT |
|---|---|---|
| 4-8 MB Up. (A310,440,3000*) ⇓ | £119 | £139.83 |
| 4-8 MB Up. (A5000*) ⇓ | £135 | £156.62 |
| *rework for A3000/5000/25mhz | £25 | £29.38 |
| A3010 1-2 MB Upgrade ⇓ | £30 | £35.25 |
| A3010 2-4 MB Upgrade (exch) ⇓ | £49 | £57.58 |
| A3010 1-4 MB Upgrade ⇓ | £59 | £69.33 |
| A3020/4000 2-4 MB Upgrade ⇓ | £40 | £47.00 |
| A5000 2-4 MB Upgrade ⇓ | £60 | £70.50 |
| A3000 1-2 MB Non-Upgrade | £20 | £23.50 |
| A3000 2-4 upgrade (exchange) ⇓ | £49 | £57.58 |
| A3000 1-4 MB Upgrade ⇓ | £59 | £69.33 |
| A3000 Serial Port Upgrade | £23 | £27.03 |
| A310 4Mb Upgrade ⇓ | £59 | £69.33 |
| A400/1 1Mb Upgrade per meg ⇓ | £27 | £31.73 |
| Risc OS Carrier Board (A310) | £20 | £23.50 |
| MEMC 1A upg (short supply) | £45 | £52.88 |
| **NEW** A540 4Mb | £99 | £116.33 |

## RISC PC MEMORY

*ring for prices best in the Acorn World*

| Also FOR A7000 | Ex. VAT | Inc. VAT |
|---|---|---|
| 4Mb SIMM | £6.00 | £7.05 |
| 8Mb SIMM | £12.00 | £17.63 |
| 16Mb SIMM | £17.00 | £19.98 |
| 32Mb SIMM | £29.00 | £34.08 |
| 32Mb High Clearance | £49.00 | £57.58 |
| 64Mb SIMM | £100.00 | £117.50 |
| 128Mb SIMM | £212.00 | £249.10 |

## 30/33 Mhz Arm 3 upgrade

| | |
|---|---|
| with FPA socket | £125.00 inc |
| with FPA 10 fitted | £179.00 inc |

## RISCPC VRAM

| | | |
|---|---|---|
| 1Mb VRAM | £38.30 | £45.00 |
| **2Mb VRAM** | **£76.00** | **£89.30** |
| 1-2 Mb (exchange) | £66.00 | £77.55 |

## NETWORKING

### ETHERNET INTERFACES

| All ethernet i/fs etc are ANT | Ex. VAT | Inc. VAT |
|---|---|---|
| A3000 int 10base2 or T , Access+ | £89.00 | £104.58 |
| A400 / A5000 10base2 or T Acc+ | £89.00 | £104.58 |
| A400 / A5000 10base2 + T Acc+ | £99.00 | £116.33 |
| A3020 10base2 Access+/ext MAU | £99.00 | £116.33 |
| A3020 10baseT Access+/ext MAU | £99.00 | £116.33 |
| RiscPC/A7000 10base2 or T Acc+ | £89.00 | £104.58 |
| RiscPC/A7000 10base2 or T Acc+ | £99.00 | £116.33 |

### Cables

| | | |
|---|---|---|
| 2M | £4 | £5.29 |
| 3M | £6 | £7.05 |
| 5M | £7 | £8.23 |
| 10M | £11 | £12.93 |
| 20M | £15 | £17.63 |

State 10base2 or 10baseT

## RiscOS 3.11 upgrades

**£29.00 exc Vat**
**£34.08 inc Vat**

## Desktop FAX MODEMS

| | | |
|---|---|---|
| 33600 Voice BABT approved | £42.55 | £50 |
| 55600 x2 US Robotics | £118.30 | £139 |
| **55600 Flex (Rockwell)** | **£67.23** | **£79** |
| **ISDN modem (external)** | **£169.36** | **£169** |
| High speed serial cards from | | £92 |

**ArcFAX £31 inc , Ant Inet £110.51 inc Vat**

## ACORN Joystick adapters

**£29.95 inc Vat**
(please state model)

## Alternative PC Base Units

**Pentium from ONLY £249.00 + VAT**
**ring for latest prices.**

## MICE & KEYBOARDS

| | Ex. VAT | Inc. VAT |
|---|---|---|
| Acorn Original Mouse | £25.00 | £29.38 |
| Acorn Replacement Mouse | £12.00 | £14.10 |
| A7000 Logitec Mouse | £15.00 | £17.62 |
| A7000 Ergo Mouse | £15.00 | £17.62 |
| **Ergo (std) RiscPC Keyboard** | **£21.28** | **£25.00** |
| **Ergo curved RiscPC K/board** | **£29.79** | **£35.00** |
| A400/A5000 replacement k/brd | £69.00 | £81.08 |
| Archie Keyboard (high grade) | £99.00 | £116.33 |



**DOOM TRILOGY**
**£32.50**
Inc. FREE Doom Secrets book.

## NEW DEALS

### *Premier Quality Ink Refills*

| | | |
|---|---|---|
| Single refills | (1x22ml) | £6.00 inc |
| Twin refills | (2x22ml) | £10.00 inc |
| Triple refills | (3x22ml) | £14.00 inc |
| Tri- Colour | (C,M.Y) | £15.00 inc |
| 125 ml | | £21.00 inc |
| 250ml | | £38.00 inc |
| 500ml | | £50.00 inc |
| 1 litre | | £70.00 inc |

All sizes available in C,M,Y,K




**Quake Resurrection £33.00**

### ARCSHARE

**Acorn networking for PCs**
**£29.95 exc Vat**
**£35.19 inc Vat**
**see network section for Cards and cables**

### SYNDICATE



For all Acorn 8Mb machines
Only £28.00 INC VAT

# THE BARGAIN BASEMENT

**(All Prices below include VAT)** PC CD-ROM SALE

## Acorn Software Bin

| | |
|---|---|
| 10/10 English | £12.50 |
| 10/10 Dinosaurs | £11.75 |
| A3010 Joystick Control | £15.00 |
| Acorn Pocket Book..Schedule | £12.00 |
| Acorn Pocket Book..A-link Upgrade | £10.00 |
| Alone in the Dark | £29.00 |
| Aries (4 game pack) | £20.00 |
| Arm Tech Labeller | £9.00 |
| Beebug Hard Drive Companion | £5.00 |
| Birds of War | £20.00 |
| Boxing Manager | £8.00 |
| Christmas Clipart SG010 | £10.00 |
| ColourSep (Colour Seperation Soft) | £8.00 |
| Creater 2 | £25.00 |
| D'File Font Pack (Academy) | £10.00 |
| D'File Font Pack (Balmoral) | £10.00 |
| D'File Font Pack (Commercial Script | £10.00 |
| D'File Font Pack (FreeStyle Script) | £10.00 |
| D'File Font Pack (Manhattan) | £10.00 |
| D'File Font Pack (Mastercard) | £10.00 |
| D'File Font Pack (Old Towne 536) | £12.00 |
| DeskEdit | £10.00 |
| Desktop Database | £15.00 |
| DeskTop Thesaurus | £14.00 |
| Diary + | £9.00 |
| Drifter | £30.00 |
| Easi Word | £8.00 |
| EasyFont3 | £24.00 |
| FIRE and ICE | £15.00 |
| Font Pack 1 (2 Disc Set) | £10.00 |
| Font Pack 2 (2 Disc Set) | £10.00 |
| FRAK (for RPC and A7000) NEW | £14.00 |
| Galactic Dan | £10.00 |
| Game ON (for RPC) | £15.00 |
| Global Effect | £25.00 |
| Guile | £10.00 |
| HERO QUEST | £15.00 |
| Imagery Art Package | £25.00 |
| Impression Borders Discs 80 Chinese | £10.00 |
| Impression Borders Discs 80 Old Engl. | £10.00 |
| Jahangir Khan Squash | £8.00 |
| Joystick Controller Software A3010 | £15.00 |
| KV ( Platform Game) | £8.00 |
| My World Support Disc Ancient Egypt | £12.00 |
| My World Support Disc Ancient Greece | £13.00 |
| Nuclides II and Elements II | £25.00 |
| **Quest for GOLD** | **£9.00** |
| Revelation 2 | £29.00 |
| **Start Write** | **£8.00** |
| **StrongGuard** | **£25.00** |
| Swiv (Budget Title) | £9.00 |
| Visual Backup | £18.00 |
| World Class Leaderboard (GOLF) | £10.00 |
| Zool (on HD) | £10.00 |

## Acorn CD-ROM Software

| | |
|---|---|
| Acorn Replay CD (back in Stock) | £5.00 |
| Creepy Crawlies | £20.00 |
| D'File PDCD 1,2,3 or 4 | £5.00 |
| D'File PDCD 5 | £10.00 |
| Hutchinson Encyclopedia | £35.00 |
| Image warehouse | £20.00 |
| **TopicArt CD** | **£10.00** |
| **YITM Electricity and magnetism** | **£15.00** |
| **YITM Elements** | **£15.00** |
| **YITM Materials** | **£15.00** |
| **YITM (all three titles)** | **£35.00** |

## 1/2 price (or less) Book Bargains

| | |
|---|---|
| Acorn RiscPC Guides | £10.00 |
| Dabhand Guide "Buget DTP" | £3.00 |
| Dabhand Guide "C" ver 3 | £8.50 |
| Dabhand Guide "C" ver 2 | £3.00 |
| Dabhand "Graphics on the ARM | £7.50 |

## 2nd User Acorn Software

| | |
|---|---|
| Compression | £8.00 |
| Hearsay II | £20.00 |
| Pipedream 4 | £35.00 |

## Various Hardware bargains

| | | |
|---|---|---|
| Panasonic PD scsi system int | £139.00 | £163.33 |
| Panasonic PD scsi system ext | £199.00 | £233.83 |
| Pioneer SCSI 4x 6x stack ext | £169.00 | £198.58 |
| Syquest 1.5G p'll port PC only | £169.00 | £198.58 |
| Syquest 230 EZflyer (SCSI ext) | £85.00 | £99.88 |

## Oddments

| | | |
|---|---|---|
| A3000 /A400 floppy (new) | £29 | £34.08 |
| A30x0 /A4000/5000 floppy (new) | £29 | £34.08 |
| **A3000 bases from** | **£85** | **£99.88*** |
| **Mouse pads from** | **£0.75** | **£0.88** |
| **486 PC bases from £150 Pent from £249*** | | |
| **STAR LC10/20/100 colour ribbon** | **£5.00** | |

## PC Utilities & Languages (on CD ROM (inc vat)

| | |
|---|---|
| Incontext Web Analyer | £10.00 |
| Incontext Web Spider | £10.00 |
| **LOTUS SMARTSUITE 97 FOR WIN 95** | **£25.00** |
| MICROGRAFIX DESIGNER | £25.00 |
| MS WORKS V2.0 (Win 3.1 or 95) | £10.00 |
| MS WORKS V4.0 | £20.00 |
| Photo Album maker | £10.00 |
| Photo Calendar maker | £10.00 |
| TURBO CAD | £15.00 |

### PC CD Business Tiltles

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|---|---|
| COREL DRAW V4.0 CD | £20.00 |
| DATA CAD V5.0 | £20.00 |
| Professor WINDOWS 95 (TUTOR) | £10.00 |

## CD Education / Multimedia/ Kids Titles for PC

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|---|---|
| 3D Body adventure | £10.00 |
| FUN SCHOOL 5 (dreamland) | £10.00 |
| FUN SCHOOL young scientist | £10.00 |
| GLOBAL FRENCH | £10.00 |
| GCSE maths 97/98 curriculum | £15.00 |
| KIDS CAD | £10.00 |
| Kids Zoo & 3D Dinasaurs | £10.00 |
| MATHS BY COLOURS | £10.00 |
| MS FINE ARTIST | £10.00 |
| SHOW & TELL (inc. free calculator) | £15.00 |

### CD Multimedia /Reference Titles for PC

| | | |
|---|---|---|
| 3D Garden Designer | | £15.00 |
| Androute Routerfinder for UK | | £10.00 |
| Atlas of Great Britain (Ordinance Survey) | | £15.00 |
| HOME GARDNER CD | | £10.00 |
| MS BASKET BALL | | £10.00 |
| MS BOOKSHELF 94 | | £8.00 |
| MS CINEMANIA 94 | | £8.00 |
| MS CINEMANIA 95 | | £10.00 |
| MS DANGEROUS CREATURES | | £15.00 |
| MS ENCARTA 96 OEM | | £15.00 |
| MS ENCARTA 97 OEM | | £20.00 |
| **MS Encarta 98 Encyclopedia** | **£39.00** | **£45.83** |
| MS JULIA CHILDS HOME COOKING | | £10.00 |
| MS MUSIC CENTRAL | | £10.00 |
| MS Magic School Bus | | £15.00 |
| ROUTE 66 (UK and Ireland) | | £15.00 |
| VISIONS OF MARS CD | | £10.00 |

### CD Anglia Multimedia Reduced to clear

| | |
|---|---|
| **Nelson and his Navy** | **£15.00** |
| **Romans** | **£15.00** |
| **Understanding the Body** | **£15.00** |

### CD General Resource Titles

| | Ex. VAT | Inc. VAT |
|---|---|---|
| 35,000 Clip Art (WMF) | | £20.00 |
| 75,000 Clip Art (WMF) & images | | £25.00 |
| COREL ARTSHOW 4 | | £10.00 |

| | |
|---|---|
| Alone in the dark | £10.00 |
| Angel Devoid (4 cd MEGA game) | £15.00 |
| DOOM II SECRETS book | £10.00 |
| EA COMPILATION CD (10 GAMES) | £10.00 |
| HERETIC (shadow of the serpent riders) | £10.00 |
| LITTLE BIG ADVENTURE | £10.00 |
| LOOM | £10.00 |
| MAGIC CARPET | £10.00 |
| MS GOLF V2 | £15.00 |
| MS HIVE | £10.00 |
| NASCAR RACING | £10.00 |
| **RAC Rally** | **£12.00** |
| REBEL ASSAULT (Star Wars) | £10.00 |
| SLIPSTREAM 5000 | £10.00 |
| STELLAR 7 CD | £10.00 |

## PC CD-ROMS Buy 2 get one free

| | |
|---|---|
| 20th Century Almanac | £5.00 |
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| Critical Path (interative game) | £5.00 |
| Dragon Lore (2cd games) | £5.00 |
| GUS GOES TO CYBERTOWN | £5.00 |
| HYPERBACKGAMMON | £5.00 |
| Iron Helix | £5.00 |
| MANTIS | £5.00 |
| MARIOS EARLY YEARS | £5.00 |
| MINERVA SHAREWARE | £5.00 |
| NIGHT OWL 18 shareware | £5.00 |
| Quantum Gate (Interactive Game) | £5.00 |
| Quicken for Windows (personal Accounts) | £5.00 |
| RAILROAD TYCOON (Three games) | £5.00 |
| San Diego Zoo , The Animals | £5.00 |
| SOFTKEY ENCYCLOPEDIA | £5.00 |
| Travel Companion | £5.00 |
| U.S. Interactive Atlas | £5.00 |
| WING COMMANDER II | £5.00 |
| Windows 95 (Shareware CD) | £5.00 |
| WORLD ATLAS V5.0 | £5.00 |

## PC CD-ROMS Buy 2 get one free

| | |
|---|---|
| **DUNE (the game of the film)** | **£10.00** |
| F117A FLIGHT SIM/ Phantom of the Opera | £10.00 |
| FIFA SOCCER | £10.00 |
| FX FIGHTER | £10.00 |
| KINGS QUEST VII CD | £10.00 |
| Lord of the Rings | £10.00 |
| MANTIS + Civilisation | £10.00 |
| MS GOLF | £10.00 |
| Read with Me 1& 2 / Memphis Maths | £10.00 |
| **SIMCITY 2000** | **£10.00** |
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Small items........................................UPTO £5 + vat
One box of items totalling upto 25kg............£6 + vat
Computer systems...................................... £12 + vat

All prices are correct going to press. E&OE

All goods are guaranteed but not supplied on approval

# No fear for the future

Chris Cox, head of Acorn's Workstations Division, issued a statement just as we were going to press commenting on the surprise management upheavals reported last month. He says:

"Any anxious Acorn enthusiasts out there should rest assured that these latest changes are a significant step in ensuring the long-term viability of Acorn as a company, and therefore in our ongoing commitment to product development and support.

'Acorn have a reputation for developing ground-breaking technologies, which have many different uses, and in the past have been guilty of trying to do too much. This has often led to industry commentators, the media and even Acorn enthusiasts to question the company's focus and commitment to their platforms.

'The appointment of David Lee as CEO three years ago was the first step in improving Acorn's focus. In establishing Acorn as a key technology developer, David Lee concentrated the company on their best asset – their technology – and the embodiment of this in their products.

'Last month, Acorn took the next step forward by appointing Stan Boland as CEO. He is aiming to focus in even further on Acorn's key strengths, with a number of exciting strategic plans. Under this phase in Acorn's evolution, the Workstations division is as crucial an element of the business as ever before, and none of the recent senior management changes have any bearing on any of the existing plans for continued product development and distribution.

'Phoebe is still scheduled for public launch at Acorn World in October, and continues to be previewed to a 'select few' until then. So the key message to you all is: Rest assured, Acorn's future is looking brighter than ever!"

# Clan hits 6,000 members

It has been revealed that Clan Acorn, the enthusiasts club for Acorn users, has passed 6,000 members and the rate at which new members are being signed up has accelerated in recent months. This is probably in anticipation of the arrival of Acorn's new flagship computer, the Phoebe 2100. Clan members gain certain benefits with regard to finding out about and eventually owning a Phoebe 2100.

The Clan was launched at Acorn World 1994 and represents a unique club among computing enthusiasts that allows an effective, two-way channel of communication between Acorn and their dedicated users group. Clan members receive early information about new projects and technology in which Acorn are involved.

Other benefits of membership include the opportunity to acquire early product releases as well as numerous special offers and competitions. Feedback from members to the company has often influenced the direction of Acorn's technology. Few other comparable user groups can confidently claim they have influence over the computer company with which they are associated.

Chris Cox, head of Acorn's Workstations division, which oversees the Clan, said: "Acorn's relationship with their users is probably unique among the computer industry. We have always actively sought out and genuinely valued the opinion of our users and today's announcement that the Clan is bigger than ever is testament to the close relationship we have enjoyed with our users over the years. It also demonstrates the Acorn users' faith in our company and our products. I have no doubt that one day we shall be announcing a 10,000 strong membership."

The quarterly Clan newsletter, sent to all members, provides plenty of information on a variety of Acorn-related subjects. These topics are designed to interest those who are programmers and those who simply want to know about future events.

New members receive a pack containing up-to-date information about Acorn and a bundle of Clan goodies including T-shirt, mouse mat, Clan badge and utilities disc. Membership only costs a one-off charge of £15.

Credit card payments can be taken on tel: 01223-725282, or you can send a cheque to: The Clan, Acorn Computers Ltd, 645 Newmarket Road, Cambridge, CB5 8PB.

# Epson join the megapixel resolution club



Epson are not just printer makers – they're also dedicated players in the digital still camera market and have just introduced their first camera to break into the megapixel resolution club, whose members currently include Kodak and Olympus.

The new Epson PhotoPC 700 camera offers a true 1280x960 pixel resolution. A novel feature of the PhotoPC 700 is its Direct Print feature, enabling the camera to print directly to an Epson Stylus inkjet printer without the need for a host computer. All printing functions in this mode are displayed on the camera's LCD screen and controlled from the camera itself.

You can also hook the PhotoPC 700 up to a TV for a slide show of stored images. An optical zoom lens is not featured in the PhotoPC 700, however the lens is said to be a high-quality glass design, with auto-focus. Exposure compensation controls and macro close-focus mode are included, as is a continuous shooting option.

The Epson PhotoPC 700 has a recommended price of £500. Several Acorn developers support the earlier Epson cameras, so it shouldn't be long before the 700 gets RISC OS support. Contact Epson UK on tel: 01442-227246, WWW: http://www.epson.co.uk

# ARMs to dominate?

Chip-maker Cirrus Logic, who have a long relationship with ARM (they make the ARM7500 as used in the Acorn A7000 family as well as the version of the ARM for the Psion Series 5 pocket computer), have applied ARM processor core technology in a new chip which integrates all the components necessary to manage the functions of a hard disc drive.

The 3CI chip combines channel, controller and microcontroller integration in one IC, and Cirrus claim that the new chip will give much improved hard drive performance which will be a benefit to PC users in the near future.

Lucent Technologies, an off-shoot of the giant AT&T group, have joined Cirrus Logic in backing an open standard for hard disc controller technology, of which 3CI is an example. This is not the first time that ARMs have been used for controlling hard discs – IBM have been using ARMs for their high-performance SSA hard discs for big server systems for some time. ARM have a large minority share holding in a Silicon Valley company called Palmchip, who are developing ARM-based disc controller solutions.

The 3CI chip include a number of hard disc functions in addition to the ARM processor core, including a partial response maximum likelihood (PRML) read-channel, an Ultra DMA 33 disc controller for boosted burst-mode data transfer. Cirrus Logic are so confident that they will establish a new standard for hard disc controller design that Chris Russell, director of marketing at Cirrus Logic Europe, said that he thought that the cost benefits and design flexibility of ARM architecture are such that within five years the entire HDD industry would adopt it as its programming environment.

There has been some Press speculation that ARM are working on a 64-bit version of their processor core which could be announced at the Microprocessor Forum in Autumn this year, though ARM's VP for Europe, Pete Magowan, told *Acorn User* that this was a rather optimistic suggestion, though didn't rule out a 64-bit design in the more distant future.

Meanwhile, ARM have done a deal with National Semiconductor to produce a 'synthesisable' version of their ARM core. This is a version of the ARM core which can be conveniently programmed into new designs and production processes. The conventional method for doing this involves a lot of expensive and lengthy hand-optimisation; it's a bit like comparing machine code programming with compiling C code.

# Photo-real printers support

As illustrated by our current rolling feature on printers, the hot trend in inkjet printers is photo-realistic printing enabled by using intermediate shades of the primary ink trio – cyan, magenta and sometimes yellow. Canon started the trend off a couple of years ago, but now most of the major printer players in the inkjet arena offer multiple ink photo-real options, notably Epson, Canon and Lexmark.

The technology behind photo-real drivers is not trivial and it's not too surprising to find that Acorn and third-party developers have taken their time to embrace printers supporting photo-real inks. Now, the wait seems to be finally over. Spacetech have announced they have produced a new version of *PhotoLink* which supports printers using up to six inks and uses an entirely new algorithm for rasterising bitmap printer dumps.



This results in improved quality printouts, and more economic use of photo-real inks as well as improved performance on glossy paper. The excellent Epson Stylus Photo printer is the first to benefit from Spacetech's new drivers apart from Canon's BJC-4200, BJC-4300, BJC-4550, BJC-4650 models. Work is also progressing on Canon's new technical tour de force, the BJC-7000.

Spacetech's new printer drivers make use of the same Colour Management System (CMS) normally found in *PhotoDesk* to produce high-quality four-colour separations from the output of any RISC OS application.

Included with the printer driver is a calibration utility to allow the experienced user to manipulate the colour interpretation of the applica- tion. *PhotoReal* is supplied free of charge when bundled with a printer purchased from Spacetech. Otherwise, it is available for £69 inc. VAT to users who have already purchased a supported printer elsewhere. Upgrades at reduced prices are available for existing customers.

For more information, contact Rachelle Smith at Spacetech's new address: Spacetech Ltd, 1 The Courtyard, Southwell Business Park, Portland, Dorset, DT5 2JS, tel: 01305-822753, fax: 01305-860483, e-mail: rachelle@spacetech.co.uk WWW: http://www.spacetech.co.uk

## eMate Connectivity

Although the Apple Newton family may, technically, be dead – there won't be any new developments of the ARM-based personal digital assistant (PDA) since Apple's Steve Jobs closed the Apple subsidiary responsible for Newton – interest remains strong.

Xemplar, the educational computing business jointly owned with Apple by Acorn, still plan to ship as many eMates into schools as they can get their hands on, hence the announcement by Avie Electronics of an *eMate Connectivity software suite.*

Aimed at the eMate 300, the software allows documents stored on the eMate to be transferred to the Acorn desktop. Document formats are converted into a usable format, being plain text, RTF or CSV. The software supports any Newton running NOS 2.1. The Avie Electronics' website is at http://www.avie.co.uk/connectivity

## 3rd Scottish Show

The third annual Scottish Acorn Computer Show will take place on Sunday 8 November 1998 from 10am until 5pm at the Glasgow Marriott Hotel, Argyle Street, Glasgow. According to organiser Robert Todd, the show will highlight the new Phoebe 2100, which should be shipping by then, as well as Acorn NC developments.

The official show website is at: http://www.tecs.co.uk/sacs/ More information is available by e-mailing sacs@tecs.co.uk Exhibitors should contact Robert Todd at Todd Education Computer Services, Acorn Dealers Scottish Show Organiser, Tel: 0141-644 4952, e-mail: info@tecs.co.uk, Web: http://www.tecs.co.uk

## Free AntSuite fixes

Paul Vigay has released version 1.10 of his freeware *AntUtils* package. Paul says this adds a number of useful utilities to the *AntSuite* including automatic timed mail and news fetches and a fix for the infamous DLL crashing on connection problem, plus a number of other useful functions.

You can download *AntUtils* 1.1 from the Web at: http://www.interalpha.net/customer/pvigay/shareware.html

# Have Psion trumped Acorn's RTOS?

Acorn's plans for their 21st century real-time operating system (RTOS), code-named Galileo, took a severe set-back recently when Psion announced that their own EPOC OS, co-incidentally ARM-based and used in the Psion Series 5 pocket computer, would lie at the heart of a new company backed by no less than the top three mobile phone makers.

The new company, Symbian, sees arch Nordic rivals, Nokia and Ericsson, join forces with the Psion. To underline the importance of the alliance, Motorola have signed a memorandum of understanding to join the group at a later date.

Symbian's primary aim is to establish new mobile product categories, license wireless software across the industry and drive forward open standards for wireless information devices. In many ways, this was Acorn's plan for Galileo as well.

Psion, whose shares soared upon release of the news, will own 40 per cent of Symbian, while Ericsson and Nokia will each own 30 per cent. Symbian's CEO, Colly Myers, commented: "We plan to establish EPOC as the de facto operating system for mobile Wireless information devices and further drive innovation and market growth."

Symbian is the direct product of the accelerating convergence of mobile telephony and computing, ably demonstrated by Philips' Synergy Ilium hybrid mobile phone and pocket computer/organiser, which already uses the EPOC operating system. Acorn have been developing Galileo from scratch for over a year as a robust, compact and technically cutting edge multi-tasking real-time operating system. Galileo promises to be a technically better product than EPOC – after all it's a newer development, but EPOC has started the race while Galileo is still in the pits with its engine in bits.

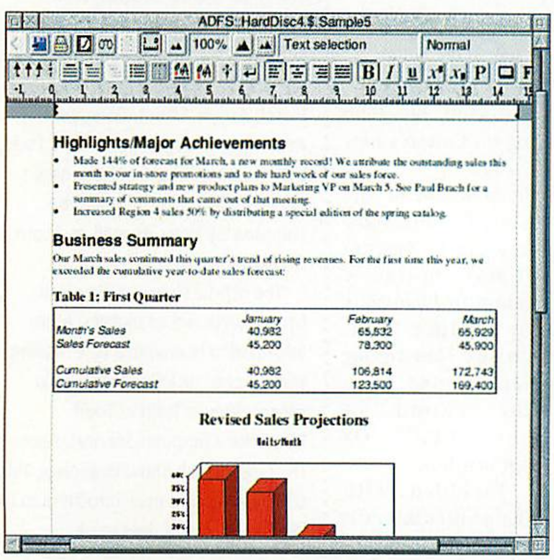
Nokia are said to be standardising on ARM processors for their mobile phones and Galileo could have been a prime candidate for Nokia. However, there is still hope – Galileo is designed to be portable, so it is not ARM-dependent and Galileo still has a chance of establishing itself in other areas, like digital TV set top boxes and NCs.

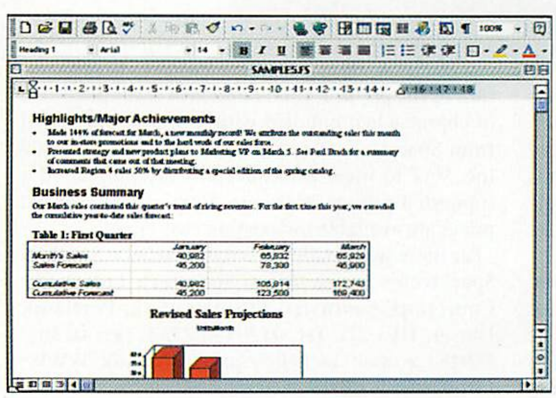
# MS Word 8 importing is easy with EasiWriter

The Acorn South East Show in Stevenage at the end of June was the launch pad for the latest versions of Icon Technology's *EasiWriter* and *TechWriter* wordprocessors. The main enhancement to both is that they can import documents created by the current version of Microsoft Word (version 8.x) which is widely used by PC users as it is a major component of Microsoft Office 97. This is in addition to the existing import and export of Word 6 & 7.

Also being seen for the first time is improved HTML i/o including drag and drop linking of documents. The addition is a product of Icon technology's involvement in Acorn's NC efforts – Icon Technology provides a tailored version of *EasiWriter* which is built in to Acorn's NC operating system and Acorn required file compatibility with popular PC applications, like MS *Word.*

Contact Icon Technology Limited at Church House, Church Street, Carlby, Lincs, PE9 4NB, tel: 01778 590563, e-mail: mike@iconsupport.demon.co.uk WWW: http://www.iconsupport.demon.co.uk/




An MS Word document before (below) and after been imported into RISC OS (left)

## Rhyme and analogy software

Sherston Software and Oxford University Press are taking their successful multimedia educational software partnership to a new chapter with the launch of *Oxford Reading Tree Rhyme and Analogy Activity Software.*

Sherston point out that there is an increasing emphasis on phonics in literacy and the new product was developed to be a valuable addition to primary school software libraries. The software is based on the Rhyme and Analogy strand of the well-established *Oxford Reading Tree Reading Scheme*, and has been developed with an emphasis on phonological awareness, particularly that of rhyme.

The package includes two CD-ROMs; volume A, which will be launched in September and volume B, which is scheduled to be available early in 1999. Each volume will contain 18 talking activities combining colourful graphics, speech, animation and sound-effects covering the 48 rhyme families from the scheme.

Lou Bonham, Sherston's Education Director, commented: "We are very proud of this new product. Not only does it look great and provide fun activities, but since it is based on Educational Psychologist, Professor Usha Goswami's well-respected research we know it has the highest educational pedigree. It should be a very useful tool for teachers in the push towards improvement in literacy that they are working so hard to achieve."

*Oxford Reading Tree Rhyme and Analogy Activity Software* packs will be available for £40 + VAT in single user site licence form, while multi-user packs are also available.

Contact Sherston Software at Angel House, Sherston, Malmesbury, Wilts SN16 0LH. Tel: 01666 840433, fax: 01666 840048, e-mail: info@sherston.co.uk WWW: http://www.sherston.com/

## ESP MIDI and Sound Programmer's Guide

If you have hankered after exploring your musical talents on computer, Derbyshire-based ESP have produced a guide to help you on your way.

*The MIDI and Sound Programmer's Guide* contains full programming information on MIDI (Version 5), MIDISupport, SharedSound, RealTime, MIDIPlay and SamplePlayer. It also contains SWI and *Command details for each module and some example code.

It covers information required for high level activities such as playing MIDI or Sample files, as well as low level programming such as writing MIDISupport drivers and sample effects drivers. The price is £15 – more details are on the Web at: http://www.cybervillage.co.uk/acorn/esp/ or write to: ESP, 21 Beech Lane, West Hallam, Derbyshire, DE7 6GP, tel: 0115-944 4140 fax: 0115-944 4150 or e-mail: sales@exsoftpr.demon.co.uk

## Power-tec is Year 2000 OK

Alsystems announced that their customers need not fear from any consequences of the dreaded Year 2000 bug. A statement from the company states that their Power-tec products will function correctly until year 2038.

*!BackUp* is the only Power-tec application that makes any real use of dates, which are stored in UNIX time format, i.e. seconds from 1970 and will not be affected by any date problems until year 2038.

The flash ROM reprogramming function of *!PowerMgr*, which stores 'old' flash ROM image names in a date format are based on a date stored inside the image and so will not be affected. All other timing dependent code uses the MonotonicTime function from the OS and thus has no year 2000 dependencies.

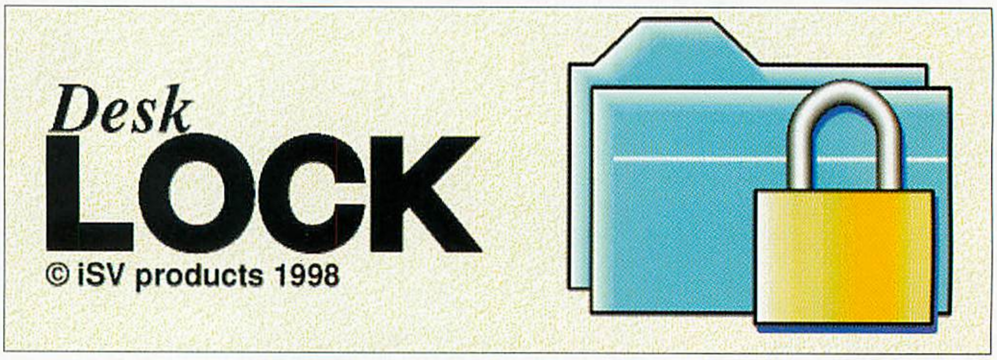
Further technical information is available from Neil Farnham-Smith, technical support engineer at Alsystems, via e-mail at: neil@alsystems.co.uk WWW: http://www.alsystems.co.uk

# New features for Desklock

iSV Products have responded to their customers' feedback and released an improved version of *Desklock*, the password protection utility originally launched earlier this year at the Wakefield show.

iSV say *Desklock* has proved to be very popular, but a couple of users asked for some extra features and these have been added. The new version now prevents obey files from being run when double-clicked. It also Blocks the AddTinyDir star command. iSV say they have also taken the opportunity to add a few new features of their own which tighten *DeskLock* even further.

This new version (1.12) can be obtained free of charge by returning the old master disc to iSV along with a stamped addressed envelope. A demo version can be obtained from the Web at: http://members.aol.com/isvproduct/ Contact iSV Products at 86 Turnberry, Home Farm, Bracknell, Berks, RG12 8ZH, tel: 01344-455769.




# CDPSFiler gets fourth release

PEP Associates have produced a fourth beta release of their *CDFSFiler* system. It had been expected that the third beta release would be the last, however, it was discovered that using this *CDFSFiler* with Cumana's SCSI II card caused serious system failure, so it was felt that it would be better to keep *CDFSFiler* at the beta stage until the problem could be resolved.

The latest bugs to be fixed include register corruption problems with the CD Audio Support module and problems with the database DLL not recognising all of the audio tracks. Some new features and other changes have also been introduced. These include an additional menu option from the play window which leads to a submenu listing the track titles (or numbers if no titles are available).

Choosing an entry causes that track to start playing. In addition to dropping *SmartCD* catalogue files onto the play window, *CDFSFiler* will now accept text files that consist of a disc title string followed by a track title string for each track. *CDFSFiler* beta 4 can be downloaded from the PEP Associates website at: http://www.pep-assoc.co.uk/ This beta release will now expire on October 1 1998. Contact PEP Associates Support at PO Box 62, Fordham, ELY, Cambs, CB7 5ZD.

# Find file upgrade

Credit where credit is due, one of the more useful features of Microsoft Windows 95 is its *FileFind* functions. Of course, there is a similar *FileFind* utility for Acorn users and it's from ID Software in Germany. Version 1.24 (04 Jul 1998) of *FileFind* for RISC OS is now available from ID Software's website at http://www.id-software.co.at

The *FileFind* utility is used for finding files and contents of files. It searches recursively into the specified directory (and archives) for the given filename. With the latest version you can search for contents using conditional operators like AND, OR and NOT, save search results, save and load options, use wildcards for filenames like "id*ware" and show search results in a separate window.

This program is most useful when used with an editor which supports throwback. The search results will be shown inside the editor from where you can open the files directly. *FileFind* is Shareware with a registration fee of a tenner.

ID-Software, Ing. Gerald Hartmann, Wilhelminenstr. 126, A-1160 Wien, Germany, tel: (+43) 1489 91 580, fax: (+43) 1489 91 589, e-mail: office@id-software.co.at, WWW: http://www.id-software.co.at

# Complications of Biblical proportions

The headache of copyright legality and associated procedures isn't exempted from religious circles. ExpLAN, who produce the *HolyBible* software package for the Acorn platform, have been wrestling with a complicated tangle of copyright issues involving Church House Publishing. An ExpLAN statement has been issued to give a definitive explanation of what has been going on:

"The CofE Liturgy is currently published by Church House Publishing as a standalone product for PCs called 'Visual Liturgy'. The content has been compiled as a module for use within ExpLAN's *HolyBible* software on the Acorn platform, but this module is currently unavailable for purchase. Following a meeting between ExpLAN (representing the Christian Acorn Users Group) and Church House in London on Friday 26 June, a strategy for its release has been proposed: They have issued a formal announcement which was given at the Acorn S.E. Show on 27 June.

'It reads: *'Church House Publishing are actively pursuing the proposal that it publishes modules for ExpLAN's HolyBible software. This will allow Acorn users access to the ASB and Common Worship lectionaries and also similar amounts of authorised C of E liturgy that appears in Visual Liturgy.'* It is clear at this stage that it will not be called Acorn Visual Liturgy and we hope to have more news during the summer once copyright and other legal issues have been cleared. To clarify this, the title 'Visual Liturgy' and the computer code bearing this name are subject to copyright, and are not wholly owned by Church House Publishing.

'The liturgical content is licensed for use within Visual Liturgy (only). Since the *HolyBible* module must now be re-named, it cannot be covered by the existing licence agreements.

'This licensing work will therefore be repeated for the new module. Further announcements on this subject will be made by the Christian Acorn User Group. Those wishing to join the group and be kept informed should contact the organiser, Rev Colin Randall at carandall@argonet.co.uk."

ExpLAN Computers Ltd, PO Box 32, Tavistock, Devon PL19 8YU, tel: 01822 613868, e-mail: explan@explan.demon.co.uk

# New products/upgrades

| Product | New features/product details | Price | Contact |
|---|---|---|---|
| Bombzll | * Puzzle game for Acorn machines running RISC OS 3 and above * WIMP level designer and import/export tools included | Special price of £8 (until 1 Sept 98) Chqs & POrders | Wag Software 5 Queens Close, East Markham, Nr Newark, Notts, NG22 0QY |
| Words and Pictures Alphabet CD-ROM | * Complements the BBC Schools TV programme for KS1 English * Explores and teaches the complete alphabet * Interactive story games and activities for each letter * Supports current literacy initiatives | £34 ex VAT | Logotron Tel: 01223-425558 E-mail: info@logo.com |
| Price reductions at Yellowstone | * Price reductions of components mean great savings on some products * Contact Yellowstone for details of other reductions | Example prices: RapIDE32 now £119.95 DeskTV now £209.00 | Yellowstone Electronic Solutions Ltd Tel: 01582-584828 E-mail: sales@yellowstone.co.uk |
| Dr Smiths Professional C Development Toolkit release 1.55 | * Suite of utilities for users of Acorn C v4 and above * Includes MemCheck, HierProf and various C utilities * Latest release solves problems of use with C v4 and speeds up MemCheck * Adds support for Module and C++ code | Upgrades form previous professional versions are free. Upgrades from standard version cost £20 + VAT | Warm Silence Software Tel: 0585 478642 E-mail: info@wss.co.uk WWW: http://www.wss.co.uk/ (demo copy available from website) |
| MasterClips Collection | * Collection of 303,000 images over 20 CDs * Variety of formats incl WMF, TIFF, JPEG, GIF * Includes PD image conversion software | £59.99 inc VAT | ESM Computers Ltd Tel: 0191-584 5834 E-mail: esmsales@argonet.co.uk |
| Acorn drivers for SyQuest SparQ parallel port drive | * The SparQ drive is a 1Gb removable drive unit * Easy to install using Cumana's !BootPP | £199 + VAT !BootPP alone costs £60 + VAT | Cumana Tel: 01279-730900 E-mail: sales@cumana.co.uk |
| Panasonic PD/CD parallel port drive | * Combines a 650Meg cartridge removable drive unit + 6x CD drive * Easy to install using !BootPP | £299 + VAT (Drive, cable, s/ware and cartridge) | Cumana Tel: 01279-730900 E-mail: sales@cumana.co.uk |

## Skullsoft are on the Web

Skullsoft's Chris Egan has contacted *Acorn User* to remind readers that we omitted their website address in last month's news pages. The URL is http://www.eganc.demon.co.uk/skullsoft/

## Acorn and TechWriter help net award

Bill Richardson, a teacher at the Elgin Academy in Scotland, has just been awarded an MBE. So what you may think? Well read on.

Acorn and Icon Technology can justly claim to have made a small contribution to this MBE as Richardson earned the accolade through his work in promoting mathematics in education and publishing the *Mathematical Society's Mathematical Gazette* – using *TechWriter* and an Acorn of course.

The publication is a heavyweight tome (the current issue is 512 pages long) and is, according to Icon Technology's Mike Glover, beautifully and professionally produced. The books are output in PostScript to a Zip drive which is then sent by courier to a printer in Leicester, ironically, not far from where Icon Technology are based. Copies of the *Mathematical Gazette* are distributed all around the world.

## PD spreadsheet

Tim Dilks has produced a public domain spreadsheet program for RISC OS. According to Tim the program makes full use of the RISC OS outline font system and has quite an advanced system of functions for manipulating data to work out things like standard deviation, etc. Version 0.80 is available from Tim's website, although he admits there are a few bugs in this version. Version 0.81 may well be available instead by the time you read this. Tim's website is at: http::/www.compsoc.man.ac.uk/~tjd

## Contacting me

You can contact the news page by writing to me Ian Burley at the usual Acorn User address or by e-mail: aunews@idg.co.uk

Showroom open Mon-Sat 10-18.00 hrs **(All prices INCLUDE VAT)** Carriage not included

Reduced Prices

# RiscOS Computer Systems

1yr warr. **Carriage included on computers.** All machines are single slice. Backplane fitted to 10M/34M RiscPC

**233MHz StrongARM now fitted to all RiscPC Computers.**

| Computer Model with | 14" (Samsung) | 17"(VMastr) | No Monitor |
|---|---|---|---|
| Acorn NC 16MB(10BaseT) with Mse/Kybd | £460 | £700 | £330 |
| A7000+ 8MHD1.2Gb | £915 | £1160 | £785 |
| A7000+ 8MHD1.2Gb+8xCD | £965 | £1210 | £835 |
| A7000+ 8MHD1.2Gb+24xCD | £985 | £1230 | £855 |
| RiscPC SA233 4MHD1.7 (SRP20A) | £1029 | £1274 | £899 |
| RiscPC SA233 4MHD1.2+8xCD (SRP21) | £1040 | £1285 | £910 |
| RiscPC SA233 4MHD1.7+24xCD (SRP20A+CD) | £1079 | £1324 | £949 |
| RiscPC SA233 10MHD1.2+8xCD (SRP26A) | £1355 | £1600 | £1225 |
| RiscPC J233 34MHD1.7+24xCD (SRP41) | £1455 | £1700 | £1325 |

**RiscPC J233 includes the Acorn J233 Internet software pack comprising !Browse, RisCafe JAVA & OmniClient II**

**Add £50 to 14" (Samsung) prices for Samsung 15" Monitor instead.**
**Add £25 to 17" prices for VisionMasterPro instead of VisionMaster**

**Check out the amazing savings on the following options when you purchase a RiscPC computer.**

| | |
|---|---|
| **Acorn 486DX-100 MHz PC Card** | **£58** |
| **Acorn 5x86-100 MHz PC Card** | **£146** |
| **Acorn 28.8k Internal Modem** | **£58** |

(A backplane for the modem will be included free of charge for the SRP20A)

**Receive a discount of £200 when you Trade-in ANY computer including BBC Micro's, Electron or XT PC's etc when you purchase a RiscPC SRP26A or SRP41 RiscPC.**

**Interest Free Finance on Acorn computers - NO deposit & 6 interest free monthly payments. Loans from £700(min) - £3000. Subject to status.**

You must be a member of Acorn Clan to qualify for the above offers, £15 to join. The above offers are valid from 1st July - 30th September 1998.

# 3Com ISDN LAN Modem £325c

**Connect up to 4* computers[2] to the Internet with just ONE single ISDN dial-up[3] internet account!**

This amazingly easy to use unit is suitable for RiscOS, PC, Mac & Unix computers and compatible with BT ISDN/HomeHighway services. It provides;

- 128kbps Multilink PPP ISDN with compression & PAP/CHAP security.
- A FOUR* port 10BaseT Hub for networking to each computer[2].
- TWO analogue telephone ports for standard telephones, faxes & modems.
- DHCP Server for automatically configuring computers for the network.
- Built-In Web server for configuration & diagnostics from a conn'd computer[1].
- Built-In DNS server.
- Flash upgradeable for user-installable future firmware upgrades.

**Ring us now for further information.**

* - Expandable to support up to 10 Computers. [1] - A JavaScript enabled Web browser is required for access to Web Server. [2] - Each connected computer must be equipped with a 10BaseT network card. [3] - ISDN line and ISP account not included. NOTE - PSU, Network cabling for ONE computer and ISDN Cabling is included with the unit.

## PHOEBE 2100

**£1750 Inc.**

(without monitor)

**PLUS** an incentive which will be decided at the time of supply

**Minimum Specification**

233MHz StrongARM, 32Mb EDO RAM, 4Mb EDO VRAM, 6.4Gb HD, 32x CD-ROM, 4 PCI slots, 3 Podule slots, Mini Tower Case, RiscOS4.

We are taking advance orders now. A deposit of £100 is required which is registered with Acorn Computers Ltd.

## JazZip Tools £17a

**(free if purchased with drive)**

JazZip provides you with a complete set of RiscOS tools for Jaz/Zip drives which are equivalent to those provided with the PC DOS utilities that are provided with Iomega drives. Requires a driver for parallel use. Features include;

- Password protection of discs using the standard Iomega protection features which are compatible across RiscOS, PC and Mac platforms.
- Lock/unlock zip/jaz discs with/without passwords
- Unlock zip/jaz discs until next ejected from drive.
- Low Level format zip/jaz discs.
- Initialise zip/jaz discs for RiscOS or DOS.
- Unprotect the Tools disc

## New Software Releases

**DOOM Trilogy for RiscOS £30a**
- A5000 - RiscPC with 8Mb RAM & CD-ROM

**Syndicate+ for RiscOS £27a**
- A5000 - RiscPC with 8Mb RAM & CD-ROM

**Ankh for RiscOS £23a**
- RiscOS >=3.1 with 4Mb RAM, VGA & CD-ROM

**Frak for RiscPC £14a**
- RiscOS >=3.5 with 4Mb RAM & VGA

Mail Order - 0161-474 0778 **(All prices INCLUDE VAT)** The lowest prices without compromise

## Monitors (Carriage £10)

Older computers will require an adaptor £12

**Samsung 14" Monitor £130**
FST, 0.28" dp, 1024x768, 30-54kHz & pre-sets.
**Samsung 15" Monitor £180**
High spec FST Tube with 0.28" dot pitch
Ilyama VisionMaster 17" £375
High spec FST Tube with 0.26" dot pitch
Ily VisionMaster Pro 17" £400
Very High spec Diamondtron tube, 0.25" stripe

## Memory

**Following prices strictly whilst stocks last.**

**RiscPC/A7000 SIMMS**

| | | | |
|---|---|---|---|
| 16Mb | £20a | 32Mb | £35a |
| 64Mb | £120a | 128Mb | £Calla |

**RiscPC VRAM**

| | | | |
|---|---|---|---|
| 1Mb 2nd user | £35a | 2Mb | £88a |

1-2Mb u/g (exchange) £65a
**Call for details of memory for other models.**

## Hard Drives/Interfaces+

**Carr.: a=£2, b=£6, c=£8**

**Hard Drives**

| | |
|---|---|
| Quantum 2.1Gb IDE | £105b |
| Quantum 5.1 Gb IDE | £140b |
| IBM 540Mb SCSI | £120b |
| Cheetah 4.5Gb SCSI | £520c |
| Cheetah 9.1Gb SCSI | £830c |

10,000rpm Cheetah drives useful for VideoDsk

**Interfaces/Cables**

Simtec IDE Interface £65a
Supports up to 4 AT devices including Hard Drives, CD-ROM drives and zip drives.
Cumana SCSI II £155b

## CD-ROM Drives

**Internal CD-ROM Drives**

| | |
|---|---|
| Panas'c 24xCD **ATAPI** | £60c |
| Toshiba 32x CD **SCSI** | £100c |
| Cable & Fitting Kit | £10a |

Compatible with RiscOS 3.60 or greater.

**External CD-ROM Drives**

| | |
|---|---|
| Panas'c 24xCD **ATAPI** | £120c |
| Toshiba 32x CD **SCSI** | £160c |

External Drives require a suitable Data cable.

## I³ Networking (Carr. £6)

| | |
|---|---|
| A30X0 EtherLan 102 | £130 |
| Archi EtherLan 514 | £130 |
| RPC/A7k EtherLan 602 | £110 |

Add £17 to above prices for Access+.

## RiscPC Upgrades

**RiscOS 3.70 Upgrade £58a**
**- Above is suitable for RiscPC's only.**

| | |
|---|---|
| 233MHz StrongARM | £275b |
| 586-133 PC Card (512kb) | £360c |
| PC Pro (without PCExchange) | £38a |
| Windows '95 CD (Full) | £80a |

Can be installed without any prev PCOS pres't

| | |
|---|---|
| 2nd Slice with PSU | £116c |
| 2nd Slice without PSU | £90c |
| YES 16 bit Mozart Card | £70a |

## Printers (Carriage £8)

Canon BJC-4300 £135
Canon BJC-4550 (A3) £250
- Includes Free PhotoReal Cartridge.

| | |
|---|---|
| Canon BJC-620 (720dpi) | £215 |
| BJC-7000 (1200x600dpi) | £250 |
| Epson 400 (720dpi, 3ppm) | £149 |
| Epson 600 (1440x720dpi) | £195 |
| Epson 800 (1440x720dpi) | £270 |
| HP LaserJets 6L (6ppm) | £295 |
| HP LaserJets 6P (8ppm) | £585 |

## Zip/Jaz Drives

**Include Our JazZip tools**
- £17 if purchased separately

| | |
|---|---|
| Int SCSI zip drive | £115c |
| Ext SCSI zip drive | £115c |
| Ext Parallel zip drive | £115c |

- add £29 for RiscOS Parallel Driver

| | |
|---|---|
| 100Mb zip cartridge | £11a |
| Pk of 6 zip discs+caddy | £65b |
| Int 1Gb jaz drive (3½") | £220c |
| Ext 1Gb jaz drive | £260c |
| 1Gb jaz cartridge | £70a |

Carriage: a = £2, b = £6, c = £8, d = £10

## Modems (Carriage £8)

| | |
|---|---|
| Budget 56kVoice Modem | £95 |
| Pace 56k Voice (Flash) | £140 |
| Pace 56k Solo (Flash) | £190 |

- The Solo modem can save fax & voice
- messages without a computer attached!
Modems come with a 9-25 PC wired cable.
A3000/Archimedes req'r an Archi wired cable.

| | |
|---|---|
| ANT Internet Suite II | £110a |
| Dual Serial Card | £104b |

9-25 Archi or PC Wired Modem Cable £12ea.a
3-way Serial T-Switch (incl. comm. cable) £32b

## Portable Computers

**Carriage: a=£2, b=£6, c=£8**

Pocket Book II (1Mb) £230c
**Psion 5 4Mb RAM £395c**
**Psion 5 8Mb RAM £425c**
**- includes PsiWin Link**
**AutoRoute Express £30a**
**PsiRisc £69a**
**- one of the best packages for the PB/3a**

| | | | |
|---|---|---|---|
| A-Link | £59a | | |
| Parallel Link | £34a | PsiWin PC Link | £80b |
| 3/3a Mains Adap. | £18a | 5 Mains Adaptor | £20b |

## Scanners (Carriage £8)

ScanLight Video 256 £75
- suitable for A3000-A4000 (Only Two left)

**Epson Colour Scanners**
Include !TWAIN & ImageMaster for RiscOS. Bundles include software for PC's/PC Cards

| | |
|---|---|
| GTx-5000 Para bundle | £210 |
| GTx-5500 SCSI bundle | £265 |
| GTx-9500 Para bundle | £615 |
| GTx-9500 SCSI bundle | £645 |

## Hardware Upgrades

| | |
|---|---|
| 24i16 Card (1Mb) | £450b |
| DMI50 Dual Midi Card | £138b |
| DMI50XGS Midi/Synth | £335b |
| Dual Serial Card | £104b |
| FPA for 25MHz ARM3 | £67a |
| Joystick I/F (Not RiscPC) | £30a |
| Logitech Mouse (Acorn) | £29a |
| Movie Magic (1 only) | £175b |

- Includes two VideoCD films

| | |
|---|---|
| RiscTV Card (Irlam) | £285b |
| RiscTV Keying Module | £46a |
| RiscTV Teletext option | £45a |
| Scart Cable (9 or 15 pin) | £12a |
| Serial Upgrade (A3000) | £27a |
| 100W Stereo Speakers | £25c |
| Videodesk (Irlam) | £1145b |

## Books (No VAT)

**Carriage: a=£2, b=£6, c=£8,**

| | |
|---|---|
| Acorn RISCOS3 PRM's | £99.95c |
| Acorn Volume 5a PRM | £29.75c |
| Acorn BBC Basic VI Guide | £19.95b |
| Acorn RiscPC Tech Ref Manual | £49.95c |
| Budget DTP (Dabs) | £5.00a |
| 'C' A Dabhand Guide (Dabs) | £5.00b |
| RiscOS 3 First Steps (Dabs) | £5.00a |
| Wimp Programming for All (Beebug) | £10.95a |

## CD-ROM Software

**Browse (Acorn) £36.00a**
**RisCafe (JAVA) £36.00a**

| | |
|---|---|
| ArtWorks on CD (CC) | £105b |
| Childrens Micropedia (Kingfisher) | £72b |
| ClipArt CD 1/2 (CC) | £21a each |
| **Doom Trilogy (RiscPC only)** | **£30a** |
| Dune II (Eclipse) | £32a |
| Hutchinsons Encyclopedia 92 for RiscOS | £19a |
| Hutchinsons Encyclopedia 97 for PC only | £19a |
| Musical Instruments (MS) | £50a |
| RiscDisc Vol 1 / 2 / 3 CD | £15a / £20a / £25a |
| Simon the Sorcerer CD | £32a |
| The Way Things Work (DK) | £50a |
| TopicArtCD (DTP) | £15a |
| Ultimate Human Body (DK) | £50a |

## Applications

**Carriage: a=£2, b=£6, c=£8**

| | |
|---|---|
| ANT Internet Suite (ANT) | £110a |
| ArcFax (David Pilling) | £33a |
| ArtWorks (CC) | £105b |
| Card Shop (Clares) | £23a |
| Compression (CC) | £31a |
| DataPower2 (IOTA) | £165b |
| Disc Rescue 2 (Look) | £43a |
| Eureka v3 (Longman) | £105b |
| FastSpool+ (WSS) | £18a |
| FireWorkz Pro (Colton) | £165b |
| Font FX 6 (DataStore) | £30a |
| HTML Edit 3 (R-Comp) | £47a |
| ImageFS2 (Alt Publ) | £43a |
| Impression Style / Publisher | £83b / £136b |
| MacFS / MacFS Lite (CC) | £105a / £51a |
| Mr Clippy (iSV) | £19a |
| Personal Accounts (Apr) | £45a |
| PhotoDesk Light (Spacetech) | £129b |
| Sibelius 6 / 7Stud. / 7 | £100b / £349b / £699b |
| SparkFS (Pilling) | £24a |
| StrongGuard (ARMClub) | £24a |
| Web Designers Toolkit (R-Comp) | £28a |

## Games (Carriage £2)

| | |
|---|---|
| Alone in the Dark (Krisalis) | £32a |
| Birds of War (4D) 2Mb | £30a |
| B H P (TBA) | £28a |
| Break 147/Superpool (4D) | £30a |
| Crystal Maze (Sher) Floppy £28 / CD | £32a |
| Cyber Chess (4D) | £16a |
| Drifter (4D) | £30a |
| Dune II (floppy) (Eclipse) | £30a |
| Fire & Ice (Times Warner) | £23a |
| Holed Out Compendium (4D) | £16a |
| Krisalis Collection | £28a |
| Lotus Turbo Chall2 (Kris) | £26a |
| Magic Pockets (Reneg) | £26a |
| Play it again Sam 2/3 | £24a each |
| Real McCoy 2/3/4/5 (4D) | £30a each |
| Saloon Cars Deluxe (4D) | £30a |
| Scrabble (US Gold) | £26a |
| Simon the Sorcerer 2Mb | £27a |
| Spobbleoid Fantasy (4D) | £27a |
| Starfighter 3000 (Fednet) | £28a |
| Stunt Racer 2000 (4D) | £30a |
| Virtual Golf (4D) 2Mb | £30a |
| **Wolfenstein 3D** | **£15a** |

**- Now compatible with RiscPC+StrongARM**

## Educational (Carr. £2)

**10/10 Series £14a each**
Early Essentials (over 7), English (6-16yrs), French (8-16yrs), Junior Essentials (5-11), Maths (Number) (6-16), Maths (Algebra) (6-16), Maths (Statistics) (6-16), Maths (Geom'y) (6-16), Spelling (over 9), Essential IT, Geog.,

| | |
|---|---|
| Fun School 3 (under 5, 5-7, or over 7) | £22a |
| Fun School 4 (under 5, 5-7, or over 7) | £22a |
| Maths Circus (4Mation) | £28a |
| Naughty Stories Volumes 1 or 2 | £45a each |
| Playdays (Gamesware) | £24a |
| Rosie & JimTwin Pack | £18a |

## Printer Consumables

**Carriage: £2 for Cartridges, £8 for Toner**

| | | | |
|---|---|---|---|
| BJ-10 (BC-01) | £18 | BJ-300 (BJI-642) | £16 |
| BJ-210 (BC-05) | £28 | BJC7000 (BJ-60) | £25 |
| BJ-200 (BC-02) | £19 | BJC7000 (BJI-61) | £18 |
| BJ-240 (BC-06) | £Call | BJC7000 (BJI-62) | £27 |
| **BJC-600 Series** | | | |
| BJI-201HCbk Black | £10 | **BJC-4000 Series** | |
| BJI-201bk Black | £6 | BCI-21Bk Black | £8 |
| BJI-201C/M/Y | £8 ea. | BCI-21C Colour | £16 |
| **BJC-800** | | BC-20 Fast Black | £25 |
| BJI-643 Black | £18 | BC-22 Photo Cart | £34 |
| BJI-643C/M/Y | £23 ea. | BC-22 Photo Kit | £39 |
| **HP DeskJets-500 ser.** | | **HP DeskJets 600 ser.** | |
| Mono | £23 | Mono | £25 |
| Colour | £25 | Colour | £27 |
| Eps Stylus Black | £16 | Eps Stylus II Black | £20 |
| Eps Stylus Colour | £26 | Eps Stylus II Col'r | £26 |
| **Laser Toner** | | C3903A (LJ5P) | £64 |
| EP-L (LBP-4) | £64 | HP92274A (LJ4L) | £60 |

## Terms & Carriage

**Carriage:** To benefit personal callers to our showroom carriage is itemised seperately. The carriage indicated is for single items. Please call us for total carriage when ordering more than one item since it is not cumulative.

**Terms:** All prices include VAT except books. Carriage is not included unless otherwise stated. Carriage charges apply to mainland UK (excluding remote areas, Scottish Highlands, Chann Isles, IOM), elsewhere at cost. Orders MUST be accompanied by a phone number. Prices and spec's subject to change without notification. Goods subject to availability. Goods not offered on trial basis. Restocking fee on non-faulty returns. Educ Inst official orders accepted. E&OE.

## Where to Find Us





# Desktop Projects Ltd

**Tel: 0161-474 0778**
**Fax: 0161-474 0781**

Unit 2A, Heapriding Business Park, Ford St, **STOCKPORT**, Cheshire. SK3 0BT. www.desktopp.demon.co.uk
Email: info@desktopp.demon.co.uk. Open Mon-Sat 10.00-18.00 hours.


We Accept SWITCH Access VISA DELTA

Acorn Centres of Technology

SEP 98

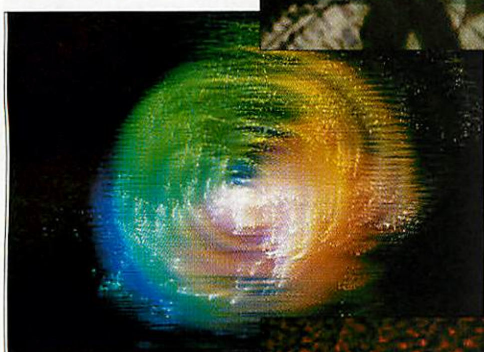
# Delirium

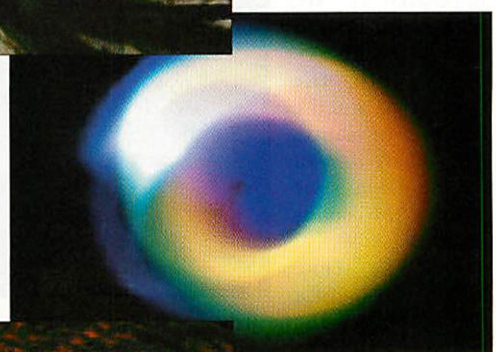
Until recently I hadn't seen a decent screensaver for the Acorn. For a couple of years now, Kulture have been promising a screensaver called *Delirium*. I have to be honest, I thought it would never come out and even if it did it would not be to my liking. Fortunately for us, 8 June saw the release that many thought wouldn't happen. I downloaded it (and the effect packs) and double-clicked on the icon.

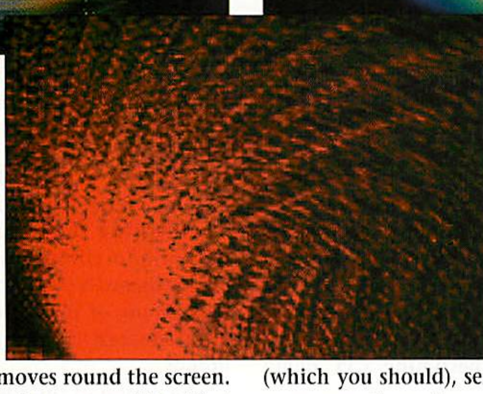
*Delirium* sits quite happily on the iconbar and only requires a click here to open the Preferences window. There are a few options: Saver type, Saver time which is the delay before the saver starts, Dim time which is the delay before the screen dims and a configure button for certain savers. The savers are available as packs, of which six more will be coming soon. The current ones include an array of different graphical effects.











There are two simple effects which don't require much memory. One blanks the screen and the other bounces a banner around the screen. The first 'proper' effect is the Blur Cluster. This uses a mix of dot rotation and blurring for a pretty effect. The dots make up the word *Delirium* as it rotates and moves round the screen. Astute code watchers may have seen this effect being shown at the Wakefield show.

Next up is Haze which I found quite boring, but this is only due to my impatience. The effect builds a picture by plotting rows of 45 degree shaded lines, but it takes a few minutes to actually show anything.

Head Punch, on the other hand, is a much better effect and uses quite a harsh random plotting routine. Again this effect uses blurring and the colour content is added via rows of transparent sprite plots or rings. Head Punch can be configured to plot really bright (Hot) rings or some laid back (Cold) rings. Spray is reminiscent of the effect in the *Liquid Dreams* demo and was originally written on an ARM2. This now runs in a screen mode of 1024x768! It has also gained a 256 colour redefined palette for smooth shading. Metamorphosis is a saver that takes a directory of sprites and displays them randomly using nice fading effects as opposed to *!Slideshow* supplied on all RPCs which has no thought to fading the pictures in and out.

Star is my favourite effect of the bunch and is very similar to one of the effects in the *!Freestyle* demo. A star rotates slowly in the centre of the screen and slowly spirals outwards leaving a blurred trail. It is a very soothing saver and my copy of *Delirium* has this set as the default saver because it is so nice.

More savers are on their way for this delightful program as well as a revised front end and bug fixes. The new release, featuring extended configure options, should be available by the time you read this. It is nice to finally have a decent screensaver to rival other platforms instead of having to put up with a black screen.

Even better is that *Delirium* is shareware so if you like the program (which you should), send Kulture some money to encourage them do some more effects. The only bad point about *Delirium* is that it is RPC only and some of the effects will be very slow on anything less than a StrongARM. Indeed, some of the effects sap the power of the StrongARM so it is advisable to get hold of *AutoVCache* by Torsten Karworth which is transparently supported by *Delirium* to speed up the graphics plotting.

If you don't bother getting this necessity then you will be missing out on something top-class. *Delirium* is available for download from http://www.various-artists.demon.co.uk/delirium/ and by snail mail from Five Star Marketing.

**Nathan Atkinson**

## On the trail...

Andy Marsh is currently working on an update of *Herewith The Clues* and is desperately trying to contact the original authors, S. Cupit and S. Cruse. If you can help to track them down, please contact Andy at maddhat@argonet.co.uk or by post via myself at the PD page.

## Dr Wimp hits the spot

I mentioned in the July issue some of the positive feedback I've had on *Dr Wimp* and I've since had a steady stream of e-mails that recommend the software just as strongly.

Tom McLean comments "I have been programming for some years now and for much of that could never really get to grips with Wimp programming, in spite of trying Calcraft & Wrigley's *Wimp Programming for All*, Hobbs' *EventShell*, and *RISC User's Wimp Programmer's Toolkit*. Some months ago I stumbled on Andrew Ayres' *Dr Wimp* and the whole scene changed for me. I find it an excellent basis for Wimp programming and would recommend it most strongly to anyone."

Keith Theobald says "*Dr Wimp* gets my vote. I was programming a simple noughts and crosses game even before I had finished reading the manual. It's so simple...". It's great to see PD software competing favourably with commercial software and literature, encouraging more free software to be written as a result. The free software revolution rolls on...

## Recommended PD Libraries

- APDL, 39 Knighton Park Road, Sydenham, London SE26 5RN
- ARM Club PD Library, Freepost ND6573, London N12 0BR
- Five Star Marketing, 4 Shepherds Walk, Bushey, Hertfordshire WD2 1LZ

## DrawGen

Apologies go to Jim Lesurf, author of *DrawGen*, for painting a slightly negative picture of the application's documentation in the July issue. Without realising it I'd reviewed a broken copy from Arcade BBS, which has now been fixed.

You can also get the program from Jim's website at http://www.st-and.demon.co.uk/DrawGen/

## PinFilter

Correcting another fluff by myself regarding programs on Arcade BBS, several people mailed me to say they couldn't find *PinFilter* on the Bulletin Board.

I'm now sure the program *is* available on Arcade, as I've just uploaded it. And as a quick reminder for those that didn't see my comments last month, *Pinfilter* is the business. Download it now.

## Clean Sheet

Tim Dilks has developed a shareware spreadsheet program which is available to download from his website at http://www.compsoc.man.ac.uk/~tjd. The application, imaginatively entitled *Sheet*, is in its first version and Tim is very keen to develop the software further and tailor it to the user's needs.

So if you're interested in seeing any particular new features in the application you can get in touch with Tim at tjd@compsoc.man.ac.uk. I'll be taking a more in depth look at the program in next month's issue.

**Contacting me**

You can contact the PD page by writing to me,
Paul Wheatley, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield, SK10 4NP.
Or preferably, by e-mail to aupdpage@idg.co.uk

# Acorn Arcade interview

Following last month's mention of the excellent demos section on the Acorn Arcade website, I talked to the guys working behind the scenes to find out their views on the demo scene.

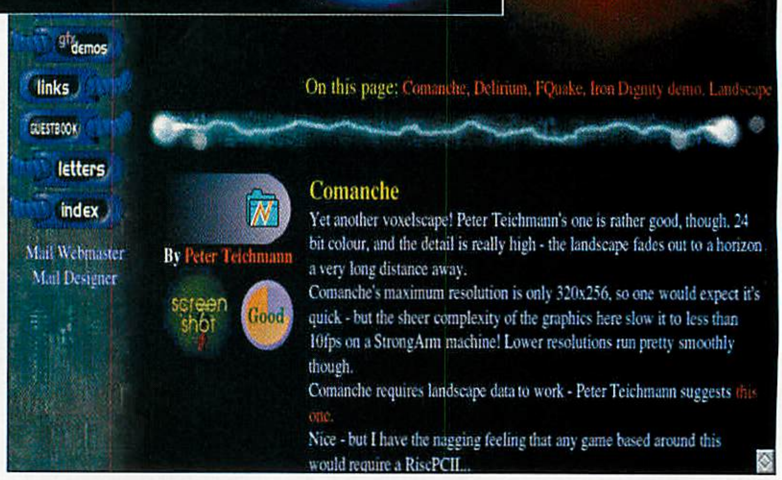
*AU: Why did you set up the demo section of Acorn Arcade?*

**Alasdair:** I was surfing the WWW one evening and I thought to myself, "There's no major truly independent demo sites on the Net so why not make one?" Since I was involved in Acorn Arcade and games and gfx demos are related, I suggested it. We then approached Alex Holloway who's into the demo scene and the idea became reality.










*AU: Where do you see the demo scene going in the coming months?*

**Alex:** The scene took a real boost a year or so ago with the arrival of the StrongARM – everyone wanted to take advantage of the seven-fold speed increase. It's cooled off quite a lot now and I'm not sure Phoebe will do much to help that, until a faster processor is available. But Revelation 98 will be interesting.

Demo groups come and go, as the members come and go from uni. But there are some interesting up-and-coming groups: Reactive are planning something special for Rev 98, and I'm looking forward to Divine Nature's first production. I'm hoping that The Xperience produce another demo, and that The Nutters don't put their threat of becoming a PC demo group into practice!

*AU: The latest word from Alex is that The Nutters ARE staying with the Acorn scene and are currently developing a plan to put together their best demo yet for the competition.*

**Alex:** At the end of the day, coders will only stay interested as long as the hardware they're working with has enough 'punch', and unless Acorn give us some up-to-date processor speeds, I fear the Acorn demo scene will die away as coders find other platforms more rewarding.

*AU: Very true. Experimenting and pushing the boundaries of new hardware is a great incentive to demo coders and without it we're unlikely to see many new demos. Hopefully the Phoebe will turn out to be more effective than a lot of people have been suggesting on the c.s.a. newsgroups. My own guess is that the increased speed of the Phoebe's bus and the improved VIDC will go some way to actually freeing up more of the power of the StrongARM. Let's hope so.*

*For an Acorn site, your design is very nice. How important is presentation on the Acorn scene?*

**Graham:** Very. People (generally those without modern hardware) talk a lot, in games, about the importance of gameplay and that graphics have to come second. What they usually fail to notice is that the very best games at the moment are appearing on the PC and console scenes, which have both incredible gameplay and fantastic graphics.

I feel that, as a website representing the whole games scene, we need to take a lead in establishing the importance of professional design and slick presentation; hopefully the games themselves will then follow suit. Maybe by making use of the same talents that produce the great design flaunted by the leading demo groups.

The design of the site as it stands is temporary – a themed design was planned back in March but never implemented due to time (real work!) constraints and as such things are looking a little patchy. Hopefully, by the time this issue appears my new design will be up in its full glory.

*AU: Thanks very much to the guys at Acorn Arcade. The team are currently working on an emulation section and a comprehensive Doom area. The PD and Shareware games section is also due to be updated at the time of writing.*

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E.&.O.E 15th July 1998

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# The facts of Internet Faxing

Regular readers of Jill Regan's interviews will have discovered that there's often a special family feeling among personalities in the Acorn world. Richard Chiswell of the rather grandiosely-titled Beebware International lists himself, his mother



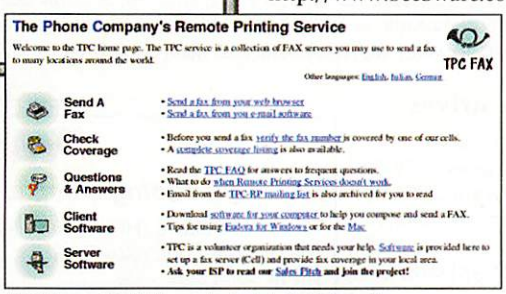

Road Warriors should read the Press Buzz

and his father among the company's board members, but that seems to be it. Even so, the Company's mission statement aims to fill niches wherever they appear.

One niche recently filled by Beebware contains their shareware 'player' for GSM sound files called *BWGSMPlay*. These files are received as e-mail attachments resulting from the activities of another niche-filling company JFAX.COM, run by an American entrepreneur called Jaye Muller. Mr Muller is a self-styled, young, cool, innovative part-time glam-rock musician and all-round renaissance man – according to his website at http://jfax.com/j_forum/index.html

JFAX.COM amazingly offer you your own telephone number in one of over 50 cities around the US and the world. Primarily intended for commercial users, and in return for a $12.50 monthly fee, JFAX.COM customers are allocated a unique phone number which accepts voice-mail and faxes only. Incoming voice-mails are converted to GSM sound files and faxes to image files, and sent as e-mail attachments to the subscriber's specified e-mail accounts anywhere in the world.

Beebware's *BWGSMPlay* can play back these voice-mail attachments, in concert with Acorn's *Replay* application and derivatives *ARPlayer* and/or *ARMovie*, through the sound system of an Acorn 32-bit computer. *BWGSMPlay* is available from the Beebware International website at http://www.beebware.com/software/




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# SMILe – the show's just beginning

In the digital future, when we're all connected by gigabit datastreams, the nuts and bolts of current serial communication technology, modems and terminals, will just be museum pieces. The integration of video, pictures, speech, music and text on our home wall screens will be seamless and the multimedia experience will be taken for granted.

Synchronized Multimedia Integration Language (SMIL, pronounced 'Smile') is probably part of that future, and is the World Wide Web Consortium's specification for the stylistic layout of multimedia presentations. SMIL is a new markup language that describes the combination and synchronisation of various types of media streams to be recognised and processed on the Web from a single SMIL (.smi) file.

HTML lacks a simple way to express synchronisation over time, so SMIL has been developed to allow dynamic TV-like content to be created on the Web. The language allows control of multimedia elements such as audio and video clips in numerous ways. Markup tags allow elements to be sequenced, played in parallel, chosen according to system bit rate or language, played from specified time-code positions and with specified screen size and positioning, and can specify many other effects.

SMIL 1.0 has just been released by W3C as a Recommendation, which is an indication that the specification is stable, contributes to Web interoperability, and is favoured by all the Consortium member companies, which include Adobe, the BBC and Microsoft Corporation.

A SMIL player and authoring environment called GRaphical INterface for SMIL (GRiNS)

```
<audio src="audience_groans.wav" clip.
begin="0s" clip.end="1.5s">
```

is being developed by Dutch company CWI. You can read all about SMIL, GRiNs and see examples of coding on the W3C Web site at http://www.w3.org/Press /1998/SMIL-REC

## Facing Change

The Rapidly Changing Face of Computing (RCFoC) is a weekly technology journal edited and written by Jeffery Harrow, senior consulting engineer for Compaq's R&D group. It claims to provide insight, analysis and commentary on contemporary computing innovations and trends. It's available in Web page format and as a RealAudio "radio" show – PC card owners only then, unless ANT have surprised us in the meantime. The Acorn StrongARM voice recognition project was mentioned in a recent issue.

*The RCFoC*
*WWW: http://www.digital.com/rcfoc/980615.htm*

## Northern ARM needs a hand

The Risc PC that runs Chris Jackson's Northern ARM BBS has suffered a motherboard failure that has kept the BBS offline for several months. Northern ARM BBS has been a landmark system for Acorn users in the north for three years, but nearly 20,000 calls later, limited student resources and the pressures of Chris's Computer Science degree course at the University of Bradford are delaying its return. Now would be a good time for a rescue attempt, so any offers or ideas for refurbishment could be sent to C.P.Jackson@SCM.brad.ac.uk

## Pay BT as you browse

British Telecom have announced trials in Northern Ireland of its pay-as-you-browse ISP-free direct Internet access service. If successful, the planned national service should be available to all in September. The new service provides customers with an alternative means of access to the Internet without registration, fixed-term contracts or monthly subscriptions. BT expect the charges to be around a penny-a-minute additional charge on their standard local call rates, less for customers on Friends & Family and PremierLine discount schemes.

*BT Newsroom*
*WWW: http://www.bt.com/World/news/newsroom/document/nr9851.htm*

## Contacting me

Keep sending me interesting URLs for the next yoUR List by e-mail to david@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181 654 2212.

# pc

# Britannica on CD-ROM – now in full colour

Having coveted the bound versions of *Britannica* for, well that would be telling, and never being able to afford it, I'm glad to say it is now in a form that is not only more affordable but thanks to improvements in *!PC* now accessible to PC card users.

The problem was that the *Britannica* CDs were written for Win95 in its full glory and early versions of *!PC* can't read them. The new version room for interpretation and individuality. Not for babies then, but for secondary age and over, it's a great resource to have available.

I have to say that so far as the user interface goes, it's not that great, taking some time to get used to and even then being a bit of a trial to navigate. It is also incredibly slow even on a fast Risc PC/PC card combo. But the information is there and the search engines will find it given







can, and pictures (for example) appear at last. Is it worth it? Yes I think it is – even at the price premium over *Encarta* or *Compton's*.

For me the real need for a good encyclopedia is when the kids bring me homework to do. I have a suspicion that in the last few years every single essay or project has returned to school with a heading along the lines of 'The World According to Bill'.

Well now you can be different. Whereas *Encarta* may be fun but very limited, *Britannica* is far more wide-ranging, scholarly and naturally somewhat harder going. But the payoff is you can find a wider information base for whatever subject you are researching and that then makes some perseverance. Graphic content is low, but the CD includes a copy of *Internet Explorer* and links are offered to Net-based resources which sometimes prove useful.

Disc swapping is a pain but inevitable until (I guess) the DVD version arrives. But I imagine that won't be long!

## Last chance for a PC card?

With production of the Risc PC about to be superseded by Phoebe, the fate of the PC card has been written – it will be no longer, as there is no slot for it in the new machine. In fact, according to an announcement on Aleph1's website, there are no cards left at Aleph1 nor, I understand, at Acorn and no more can be made because there are no ASIC chips left either. So if you want one now is the time to snap up what remains.

At the time of writing CJE still have their 133MHz cards and ACE in Germany are able to supply their versions too. In fact ACE have dropped their prices so if you still haven't got one, check out their site at www.acebace.de Of course, there are bound to be other cards in stock around the country and in the long-term there will probably be enough to satisfy demand as older slower cards will no doubt still be upgraded so long as stocks of processors are still available.

Incidentally it is to Aleph1's immense credit that they continue to work so hard on the software. As I write, the beta testers are busy smashing (or trying to smash) the near-release version of *!PCPro* 2.23. Judging by the comments that pass through my e-mail window onto their world, it's looking good and should be available by the time this text reaches print. This is probably the best update since *PCPro* itself with VESA support, more flexible configuration settings, better SCSI access and considerable improvements in reading 32-bit file names and so on. So get it! Aleph 1 say they intend to continue development so getting *!PCPro* looks like a good investment.

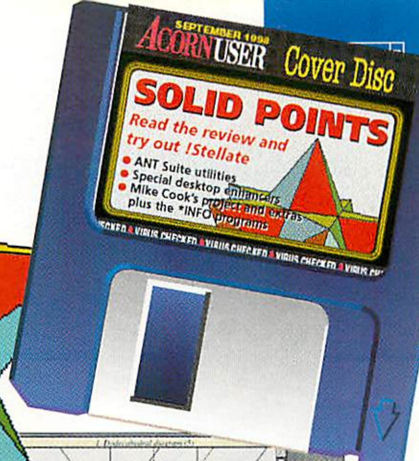
There is also a 32-bit hard drive controller being developed (by John Harrison) which should help you out when the existing 16-bit drivers cause disc bottlenecks. It's not ready as of now, but John is pleased by its relatively low failure rate at beta test and it may well have been finished by publication date. No doubt it will appear on Aleph's website in due course.

### Contacting me


You can contact me, Mike Buckingham, by post at: *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP or by dropping me an e-mail at: aupcpage@idg.co.uk

# cover disc



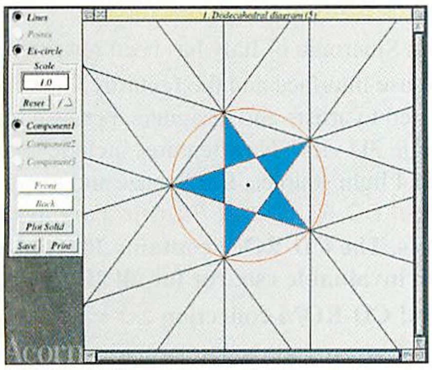



## Stellate demo

Fortran Friends

Double-click on the *!Stellate* filer icon to load it on the iconbar. Click Menu over the iconbar icon to see the menu where you can choose three ways of making a polyhedron: Wenninger, Name and Own solid.

- The Wenninger Number is defined in the book *Polyhedron Models* by M. J. Wenninger CUP
- Name provides a short list of polyhedrons you can choose from
- Defining your own solid is quite hard to do correctly, proper documentation is provided



in the full version of the program – experimentation can yield interesting results.

Click Select on the iconbar icon to open the Stored Solid window. The bracketed number in the window title is the number of polyhedra in your stored list, which is the file *!Stellate.Resources.StellaList*. Click on a name in that window to open the Parameters window showing the radius of the solid, the polyhedral parts from which it is made (called components in !Stellate) and their radii.

The radius of the solid is measured from its centre to its vertices, the radius of a component is from its centre to the centre of its planes. Click the Plot Solid button to show the solid immediately, Auto-Select to make the program use its stored info. User-Select to make your own new polyhedron.

Now select a face from the stellation diagram(s) of the component(s). You need select only one visible part of the plane, the others are inserted for you by symmetry. Close the solid, stellation diagram or parameters windows with Adjust to re-open the previous window in the sequence.

You can rotate and modify the 3D view with the following keys:

**Left/Right** – Rotates the image along its vertical axis parallel to the screen
**Up/Down** – Rotates the image along the horizontal axis parallel to the screen
**PageUp/PageDown** – Rotates the image along the horizontal axis out of the screen
**> and <** – Zooms in and out

If the keys do nothing, click in the 3D window and try again. Click Menu over the 3D view for a menu of options:

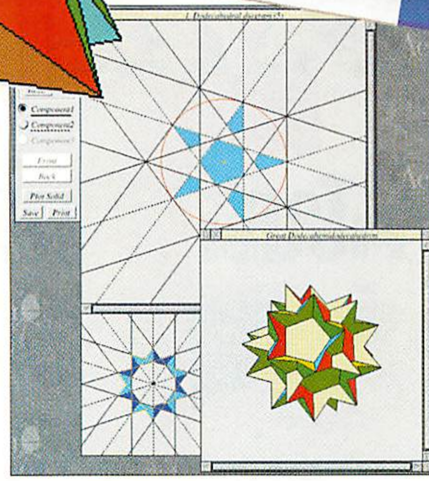
- Change the type of display (see next section)
- Change the rotation step size
- Full Sort enforces detailed sorting before plotting; this is useful for contorted non-convex solids but it takes longer and sometimes fails. This is a toggle.
- Reflect the solid from left to right creating the mirror image. This also is a toggle.




### Display types

There are several display types available:

**Wire** – Transparent faces with black front and green back lines;
**R/G stereo** – Plots the outlines twice in red and green rotated in a way to make the solid appear in three dimensions when viewed through the red/green glasses;



The next six possibilities are colouring schemes which can be shaded or unshaded:

**Single** – All faces the same colour, usually white, so that shading is effective in 16-colour modes;
**Plane** – All the faces in one plane of a component the same colour
**#Sides** – All polygons with the same number of sides the same colour;
**Component** – All faces of one component the same colour
**User** – Initially the same as Component, but the colour of any face can be changed individually.

The last two display menu items allow you to add Perspective and position the light source for shading. Further details can be found in the !Help file and the review in this issue.

## Shareware and Freeware

- Director, the latest version
- ExtraBar
- Latest WimpBasic runtime module
- Arcade serial block driver

## Regular items

- Mike Cook's soft digital oscilloscope
- Plus Mike Cook's extras Packet Radio and infra-red remote controller reader
- All the *INFO programs

## Disc information

The software on these discs has been compressed using *ArcFS 2* from VTi, and are opened by running a copy of *ArcFS* then double-clicking on the archive to open it. There is a copy of *ArcFS* on the disc.

Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

## Faulty disc?

If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify.

If it fails to verify or is physically damaged you should return it to *TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH.* If it verifies successfully return it to the *Acorn User* editorial office at the usual address.

The *Acorn User* cover disc has been checked for viruses using *Killer* version 3.001 from Pineapple Software

# spacetech imaging technology

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**PHOTODESK 2** is the package which defines studio quality image editing and artwork on RISC OS machines. It is easy to use but has many powerful features, including a sophisticated colour management system (CMS) for the full-time graphics professional. Most of the extensive programming effort invested in this project has been concentrated upon ensuring a predictable user interface with an integrated design and most importantly, all operations have been engineered to the *highest quality* possible. **£269.50 (£229.36 ex VAT)** **PHOTODESK 3 (with LAYERS) *coming soon* £299.50**

**PHOTODESK LIGHT,** an economic alternative to PHOTODESK2 retains most of its creative features apart from the Colour Management system and some features essential to the professional user. **£134.75 (£114.68 ex VAT)**

**Plug-in Effects Packs** are available for both Photodesk packages. 2 packs (FX1, FX2) each containing 10 special effects, or FF1 with 5 extra loader/savers. **£19.95 (£16.98 ex VAT)** the *NEW* FX2 contains: **Chrome, Posterise, Colour-Contour, Twirl, Glaze, Raindrops, Dimple, Channel-map, Median, and Crystallise!**




**TopModel 2** the 3D editing package from Sincronia of Italy has been rewritten to include many new features including an easy to use interface and the fantastic **GEMINI** graphics engine. This package is particularly suited to artists and designers, because for the first time it is possible to model objects in a single 3D view. New features include texture, chrome and bump mapping, lens flare, up to 1024 light sources, fog & haze and many many more! **£152.75 (£130.00 ex VAT) TopModel CD-ROM and Plug-ins are available including TopDeform with 7 exciting new tools. The CD-ROM contains 700+objects and 300 HQ textures, utilities and JPEGs. An invaluable rsource for all 3D modellers and web designers, not just TopModel owners! CD-ROM collection £34.99**
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**PhotoReal** is the Acorn driver extension for the **Canon BJC4300, Canon BJC4650, Epson Photo, Photo700 and EX** printers with photo-realistic capability. PhotoReal makes use of the same advanced techniques for producing high-quality four colour separations as Photodesk and comes ready calibrated for the special dye-based inks used for photo-realistic printing. A calibration application is also supplied to allow you to tailor the results to your own specification **Driver only £69.00 Inc.VAT. or FREE if purchased with printer! example: Stylus Photo + Driver £239.99 inc.VAT**

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# Building Utopia – *part 1*

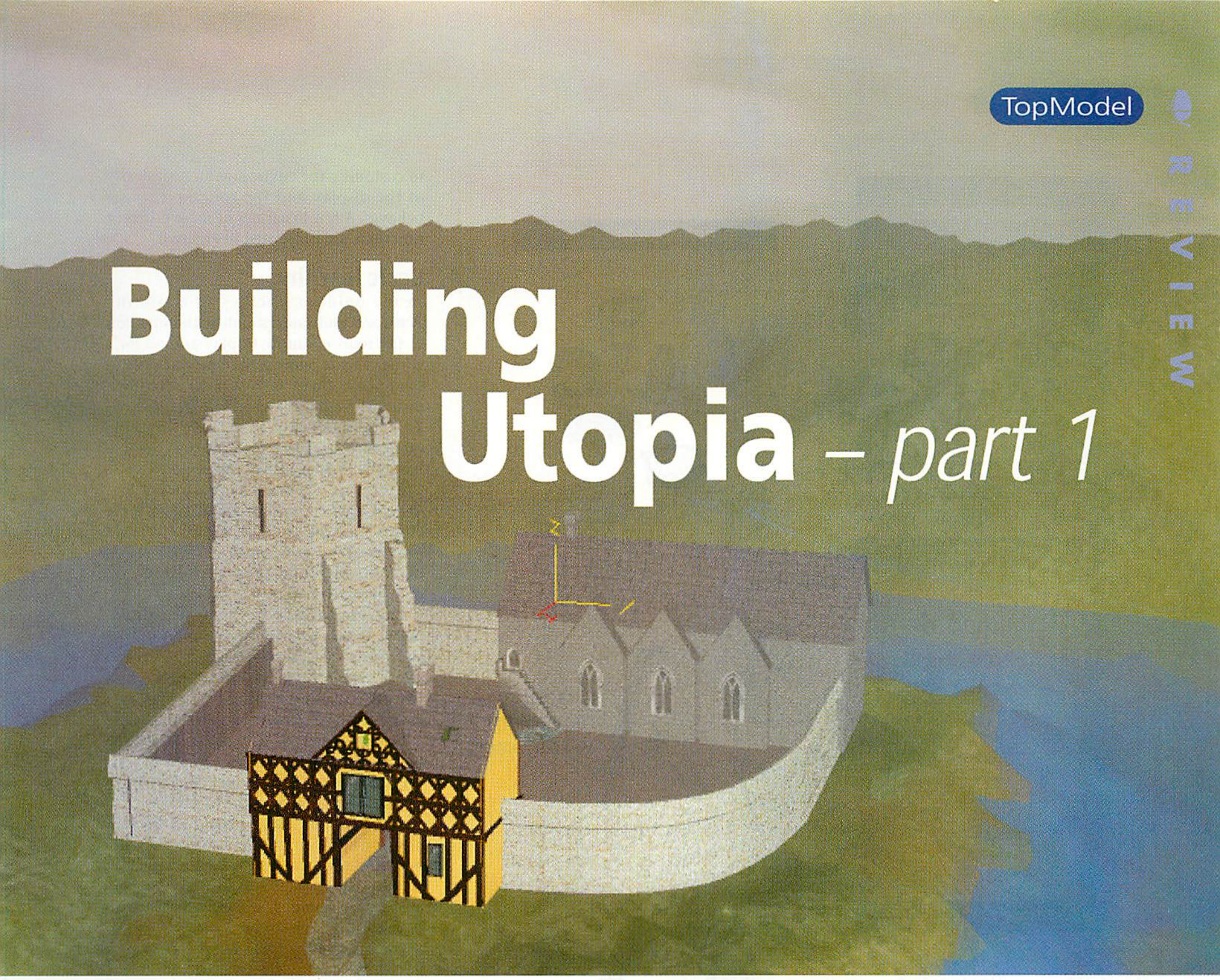


Fig I: The finished scene

**Max Palmer** downs tools in favour of 3D modelling

Anyone who has dabbled around with Acorns over the years is bound to have come across a few of the classic Acorn graphics packages, like *Draw*, *ArtWorks* and *Photodesk* to name but a few. While some of these packages might seem a bit daunting or esoteric to use initially, a bit of time and patience invested in getting to grips with the tools can soon yield impressive results.

For instance, while the function of *Paint* was relatively clear, my initial reaction to *Draw* when RISC OS first appeared was probably much like any typical Acorn user – I had no idea why Acorn had decided to provide such a strange tool with the machine and, after having a quick play around, regarded it with deep suspicion. After all, what was it good for?

If I needed a diagram I could quickly knock it up in *Paint* – *Draw*, on the other hand, seemed to offer an overly complex way of going about things and, as I soon discovered, plainly wasn't good enough for simple desktop publishing. This situation persisted until I finally came to the conclusion that *Draw* couldn't really be a folly, but was written by Acorn with good reason. So, back I went, played a little bit longer and discovered the wonderful and immensely powerful world of vector graphics.

## Why 3D?

3D packages often provoke a similar response among observers: They produce impressive results, look powerful but appear difficult to use. In addition, it is often unclear why you would need the extra functionality of a 3D package.

In fact, like the transition from *Paint* to *Draw*, once you get used to the idea of modelling objects in three dimensions, you start to become aware of a whole new world of potential applications which just would not have been possible to contemplate tackling before.

As well as being eye-catching, 3D models can dramatically alter the way you present and interpret data, can be used to visualise spatial distributions and design concepts or can simply be used to spice up your presentations or artwork. The beauty of a 3D model is, if you don't quite like a particular view, you can rotate or scale the scene until you do – something that is simply not possible in a 2D package. Although things were pretty lean to begin with, there are now a number of relatively cost-effective, powerful, but easy-to-use 3D modelling applications available on the Acorn platform. These cater for both the design oriented user and the more artistic, creative user.

The aim of this series is to present an overview of some of the more popular packages, using examples to illustrate what the packages are capable of, and to explain how one can get the best from a particular application. This month, we'll be looking at *TopModel* and focusing on the creation of the stormy castle scene shown in Figure I.

## Top modelling

*TopModel* burst on to the Acorn scene about two years ago, bristling with features and laden with the prospect of many more to come.

It is placed firmly in the creative modelling camp and, while it can be used for basic design work, it is not intended to be used as a CAD package, nor does it pretend to fulfil this purpose. It is, nonetheless, a superb 3D package for exploring the creative world of three-dimensional modelling given a bit of perseverance.

While the original version of *TopModel* had a few shortcomings and suffered from ➤

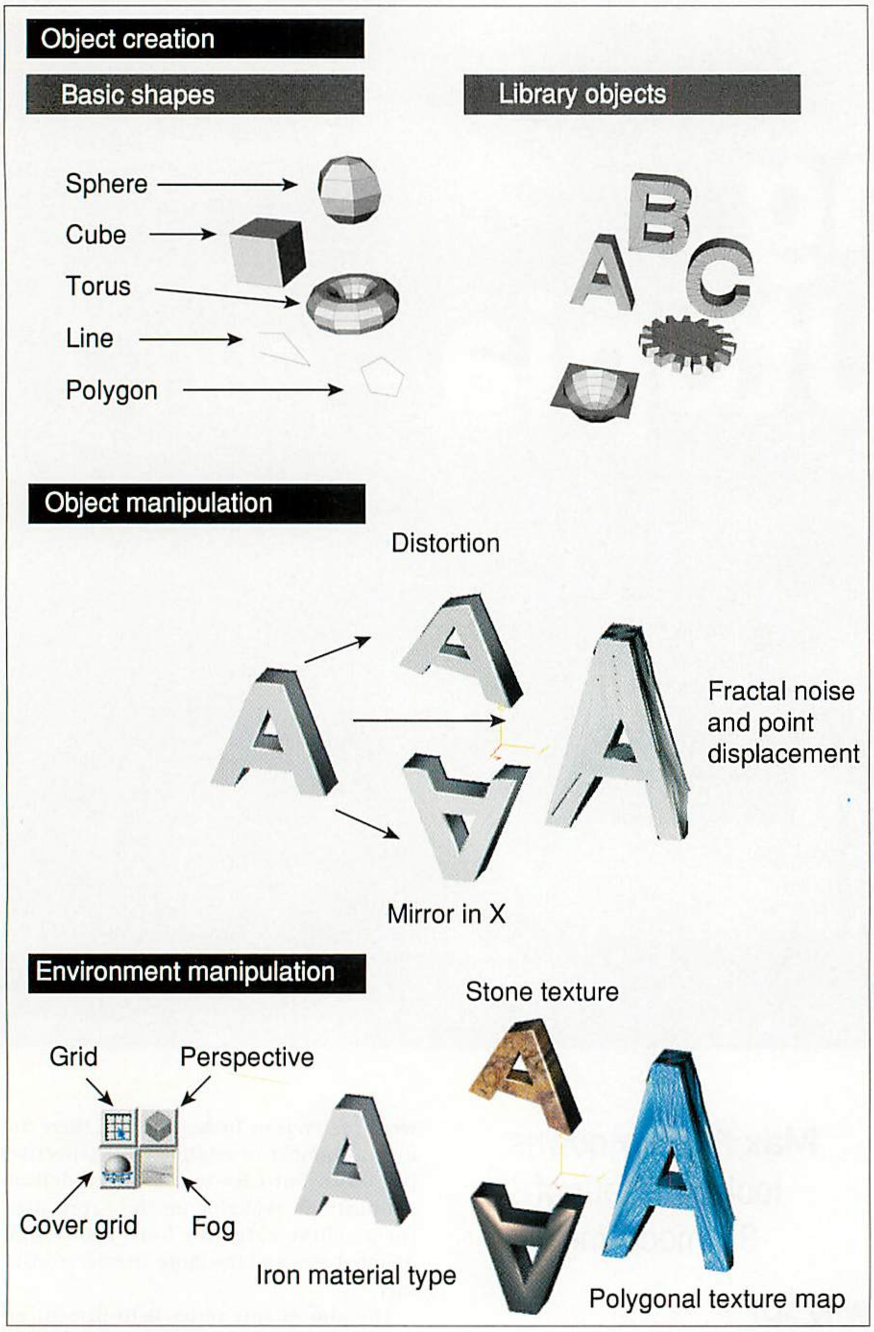



Fig II: The three basic types of operation

a poor user interface, *TopModel 2* offers new features, a friendly, more logical user interface and works in all desktop modes capable of displaying at least 16 colours, although I would strongly recommend using more than this if at all possible.

Unlike most modelling packages which provide three orthogonal views of the scene, that is, a plan view and two elevations, *TopModel* has only the one input window which automatically selects the appropriate active plane depending on the viewpoint adopted by the user. This may sound a little strange, but once you've got used to the concept the more conventional approach starts to feel a bit restrictive.

Broadly speaking, *TopModel* offers three principal type of tools. These provide facilities for creating basic object types (cubes, planes, pipes and so on) or insertion of more complex shapes from a library of objects; tools for manipulating existing objects to create more complex shapes or to mirror, distort and copy existing objects; and tools which are used to customise the environment, complexity of the display and the way the package behaves. A few examples of these different functions are illustrated in Figure II.

## Basic learning

In my opinion, the key to mastering *TopModel* and understanding the function of the tools is simply to play around for a while. Create some basic objects, extrude them, copy them, distort them, alter their properties and change their parameters. You shouldn't aim to achieve anything other than to gain a feel for what the tool has done to your initial object.

By going through this process you should start to become familiar with the effects that the tools have and will begin to understand how a particular effect can be controlled and tailored to suit your own particular needs.

This process will inevitably be frustrating at times, but will give you an idea of the power of the package and should allow you to progress from the 'let's put two cubes behind a sphere' type approach to the creation of more complex scenes.

Once you've got a grasp of how each tool operates and what they might be used for, a good exercise is to set about trying to create a simple household object – for example, a table lamp. Examine the various objects around you and try to work out how they can be broken down into simple shapes, which in turn may be created by sweeping an outline along a path or distorting even simpler objects.

For instance, a table lamp can be produced by rotating the cross-section of the table lamp about its centre using the sweep tool, while the cross-section of the lamp can be created using the line tool as shown in Figure III. Texturing can then be used to enhance the appearance.

## Onwards ever onwards...

Getting used to creating basic objects is the stepping stone to bigger, brighter and better things, since almost all apparently complex scenes are really just a collection of individual objects, appropriately scaled and positioned relative to each other.

If you can create the objects in the scene then, given a bit of time and patience, you should be able to create the scene itself.

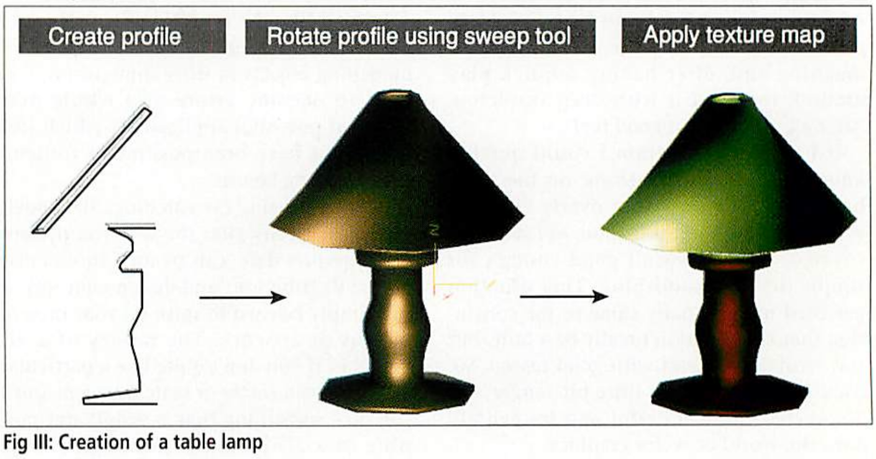



Fig III: Creation of a table lamp

While *TopModel* does not provide facilities for producing annotated diagrams for presentations, scenes can be exported as simple *Draw* files or, if shading and texturing are required, as sprites, which may be labelled in *Draw* or dropped directly into a desktop publishing package.

It is this ability to manipulate common file formats across a range of packages which really provides the icing on the cake and *TopModel* adds another dimension to this process (no pun intended).

Indeed, the power of *TopModel* may be considerably enhanced by the addition of a good bitmap graphics package to your suite of applications, allowing you to edit and create bitmaps which can then be used to texture surfaces and add that little bit of extra realism. A few example scenes illustrating the kind of things that are possible with *TopModel* are shown in Figure IV.

## Castles on a stormy day

In the previous section I advocated that one of the best methods of getting to grips with *TopModel* is to play around with the tools to gain an understanding of what they do. However, an alternative approach is to follow the creation of a scene step-by-step.

To this end, I have set about creating a scene using a number of different tools in order to help explain their function. Unfortunately, the space available for this article restricts the level of detail which can be included, however, I shall try to present sufficient information to explain how the different effects have been achieved and to impart a few of my own personal hints and tips. The castle scene shown in Figure I is loosely based on a real site in England (Stokesay) which I have drawn upon for inspiration.

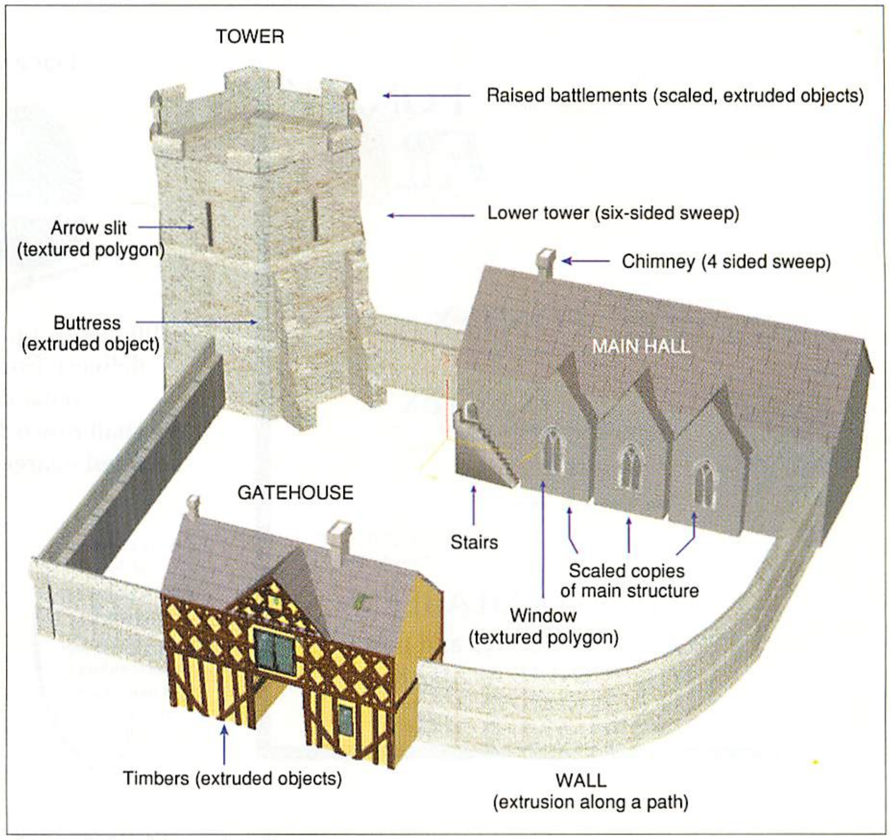



Fig V: Basic breakdown of castle scene



Fig IV: Examples of scenes created using TopModel

The scene itself is composed of a number of distinct objects which were created separately. These are the gatehouse, the walls, the tower, the main hall, and the landscape. I will now proceed to explain how each of the different objects was created (Figure V).

## The gatehouse

The gatehouse is the most complex object in the scene and is composed of a number of extruded features. Initially, I set about trying to create the appearance of the wooden beams by applying a simple texture map to the front of the building (a flat polygon) to create the illusion of structure.

While this approach is often very successful (witness games like *TombRaider*), a quick experiment using a cube soon revealed that a texture map, which is essentially a sprite applied to a surface, was not going to give me the look I required.

I therefore set about modelling the individual timbers to achieve a more realistic appearance. While this may seem a bit masochistic, a more detailed look at the structure reveals that it contains a high degree of repetition and symmetry and hence requires only a few original shapes to be produced to create the structure. The remainder can be produced from copies of the original shapes.

Each timber was created by drawing the two dimensional outline of the timber using the path creation tool with the extruded option enabled (create -> path). ➤

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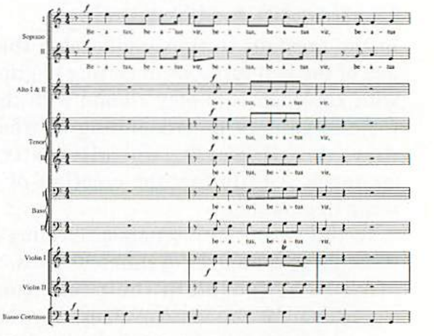
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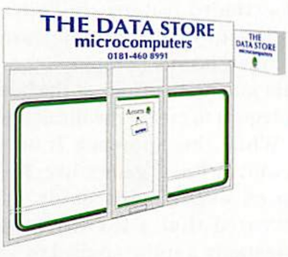
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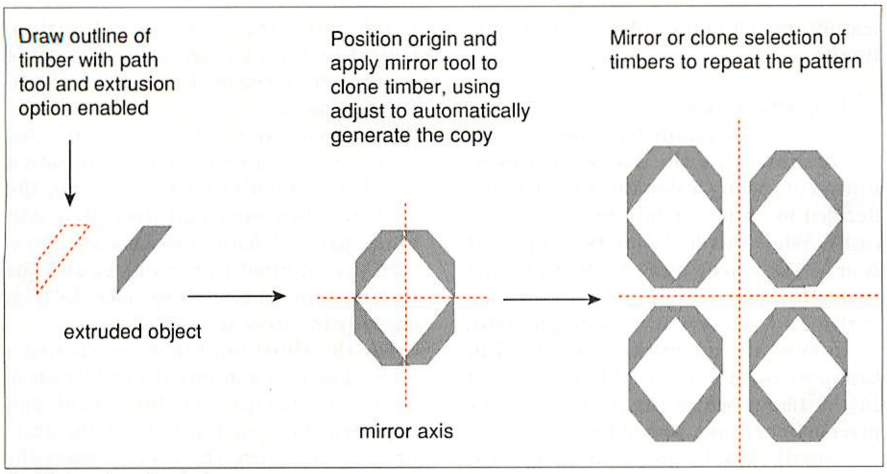



Fig VI: Creating the timber structures

This essentially extends the object in the third dimension (depth) to produce a 3D representation of the object. It therefore avoids a lot of the trouble which would otherwise be incurred trying to create an object which can be viewed from all angles. Once created, the depth of the object may be adjusted using the scaling tool, available from the modify menu.

All of the individual timber shapes were created using the extrusion tool and more complex patterns built up using the copy, mirror and rotate tools. The selection of a particular object for manipulation can be greatly eased by adjusting the viewpoint until a point in the object is clearly visible.

The point can then be selected using the select entire nets tool (selection mode 3). This trick is especially useful when dealing with cluttered scenes, where selecting the entire net of primitives is often difficult from certain angles. It is also well worth learning a few standard keyboard short-cuts to avoid having to navigate through the menu structures. For example, following the selection of a point, the entire net can be selected using Ctrl-P.

Following the creation of the timber shapes, the mirror tool (edit -> mirror) was used to produce the complex arrangement of timbers visible at the front of the gatehouse (Figure VI). For the mirror tool to operate, it is first necessary to select the axis of the reflection plane (either x,y,z or a combination of the three). The position of the plane may then be altered relative to the original object by adjusting the position of the origin in the scene, represented by the yellow and red set of axes.

The resulting copy will then be produced at the correct location. However, minor adjustments to the position of objects are inevitable and are best made using the cursor keys and shift key, rather than the mouse, since more accurate positioning can be achieved.

The use of keys in preference to the mouse also avoids the problem of accidentally selecting another object while trying to drag the currently selected object around the scene. The latter can have catastrophic consequences and I strongly recommend that you update the work buffer (using the space bar), before you attempt anything vaguely risky so that you can undo it if anything goes wrong.

Finally, the illusion of a wooden surface was achieved by applying the wood2 texture to the timbers, using the chrome option and wood4 material type to produce a realistic wood grain effect.

The remainder of the gatehouse was constructed from textured polygons using the path tool with the filled option selected. Once created, the polygons were shifted into position using the cursor keys.

To aid realism, a small sprite was created in *Photodesk* and used as a repeating texture to produce the yellow rendered effect, while additional sprites were used for the roof tiles and window. Note, all the textures were applied with the flat option selected from the attributes window to ensure that the surfaces appeared evenly illuminated.

## The walls

The castle walls were created by extruding an outline of the walls along a path using the extrusion tool (Figure VII). Firstly, the profile of the wall was created using the path tool in the create menu, with the outline option selected (create -> path). The path settings option (menu click -> path settings) was then used to bring up a path and the control points adjusted to define the path that the wall should follow. Once the correct path had been established, the wall profile was moved to one end of the path and the extrude tool used (special -> extrusion) to create the wall, using the follow path option.

The number of steps which make up extruded object may be altered to give a smoother curve by increasing the number of divisions in the appropriate dialogue box, however, twelve steps were found to be sufficient. Note, bevelling and stepping were not required since the wall's dimensions remain constant along its entire length. Finally, a stone texture was applied to give the wall a more realistic appearance.

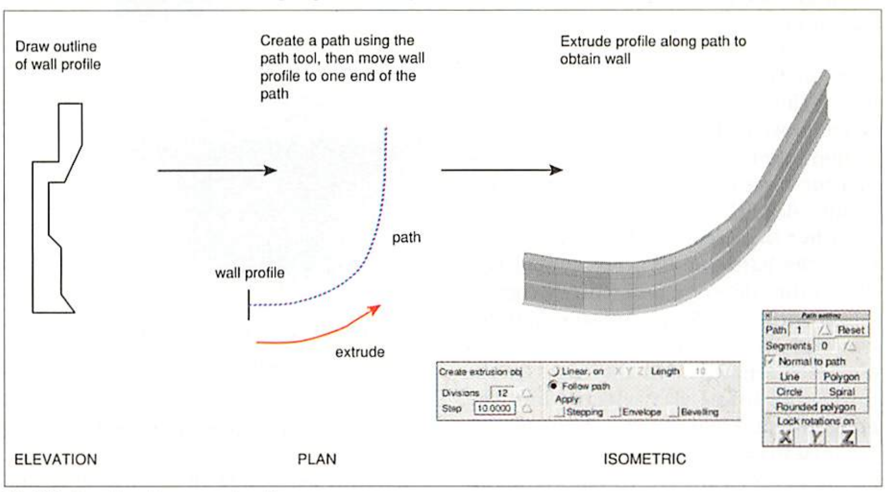



Fig VII: Creating the curved wall

## The hall

The hall was produced using a scaled copy of the gatehouse roof which was used to define its dimensions. Once the scaling had been completed, the front and rear sides of the main building were created using the polygon tool with the filled option selected (create -> polygon), while the ends of the building were drawn using the path tool (create -> path).

The main structure was then copied, scaled and rotated through 90 degrees and copied twice using the configurable copy tool (edit -> copy -> setup), which allows the number of copies to be specified along with a transformation which will be applied to each successive copy. Next, a small, four-sided polygon was placed slightly proud of the end of the cloned structure, to ensure its visibility, and a picture of a church window was applied to the polygon to produce the illusion of a window.

To prevent the whole polygon obscuring the wall behind it, the background colour of the sprite was chosen to be transparent. This option is accessed via the sub-menu icon which is adjacent to the iconised picture of the sprite in the attributes window. A full-size picture of the sprite will be displayed, from which a colour may be selected as the transparent colour.

The chimney was created by drawing the profile as an outline using the path tool with the outline option enabled (create ->

path). This path was then rotated about the z-axis using the sweep tool (special -> sweep) to create a solid of revolution. As only four sides were required, the number of polygon divisions was set to be four in the options menu.

However, a more rounded chimney could have been produced had more divisions been specified. Indeed, many interesting shapes can be created using the sweep tool and I recommend playing around with it if you have the time. The stairs are simply an extruded path that has been appropriately texture mapped.

## The tower

The tower was created in two stages. The section below the battlements was created using the same technique that was used to create the chimney. Essentially, a cross-section through the wall was drawn using the path tool with the outline option enabled (create -> path) and then rotated around the z-axis using the sweep tool to define a six-sided structure (Figure VIII).

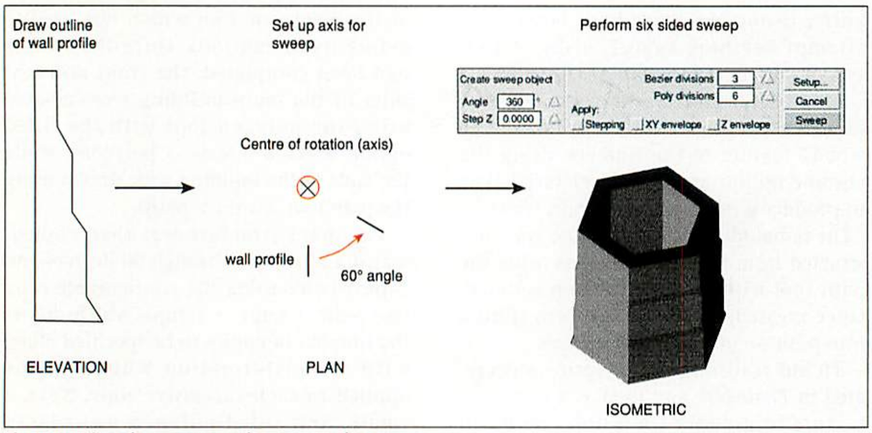



Fig VIII: Using the sweep tool to create the tower

The battlements were created by drawing a cross-section through the raised section of the battlements as an extruded object which was then scaled to be one third of the length of one side of the tower. This object was then copied, placed at the other end of the side, and a lower section inserted between the two copies so that the three objects occupied the length of one side of the battlements.

Rather than recreate the objects each time, the battlements were copied five times using the copy tool (edit -> copy -> setup) with a 60 degree rotation applied per step. To ensure that the copies remained aligned with the edges of the tower, the tower was selected and the bring to centre tool (select -> bring to centre) used to centre the axis of rotation axis on the centre of the tower. The viewpoint option and the normal option were also selected in the copy setup window to ensure that the battlements remain aligned with the edges of the tower.

To make the tower a bit more interesting, arrow loops (narrow, vertical windows) were added (simple textured polygon) along with two buttresses (extruded polygon) and a repeating stone texture applied to the polygons with a flat finish.

## The landscape

The previous sections have defined the main subject of the scene, however, instead of leaving it standing in isolation, I decided to create a landscape around the castle. While this looks pretty complex, it is in fact easy to do using *TopModel's* sprite import facility which takes a greyscale sprite and renders it as a heightfield. Essentially, the intensity of each pixel in the sprite defines the height at that point in the image while the position of the pixel defines its position in the xy plane.

A small (80x80) greyscale image was drawn in *Photodesk* using the airbrush and then smoothed to get rid of any dithering effects which would otherwise make the landscape look very bumpy. The spritefile was then dragged into *TopModel*, with shift held down to set the heightfield option, and merged with the existing file (Figure IX). Finally, the heightfield was scaled and the castle positioned on the mound so that it was in the centre of the moat.

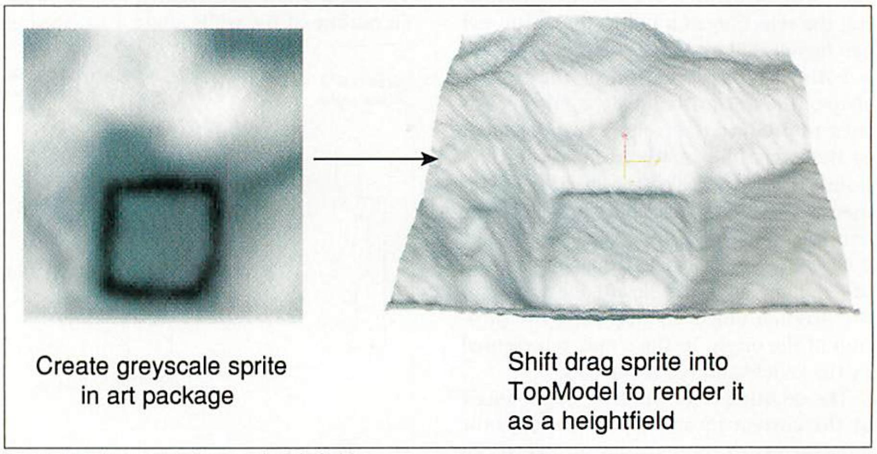



Fig IX: Rendering a sprite as a heightfield

A second copy of the heightfield was scaled up using *ChangeFSI* and natural looking textures applied to the bitmap in *Studio24Pro* to add extra realism. This file was then saved and selected as the texture map for the heightfield. The transparent water effect was created by positioning a large, four-sided polygon at the appropriate height in the vertical elevation. Unfortunately, I soon noticed that the water level seemed to change depending on the view mode.

However, I was able to overcome this problem by splitting the polygon into a number of smaller polygons, using the split into two parts tool (special -> split into 2 parts). A natural looking water texture was applied to the object and the material type set to glass to make the layer partially transparent.

For the finishing touches I created a large bitmap of a stormy sky in *Photodesk*, using the texture explorer tool and imported this into *TopModel* as the backdrop by dragging the texture from the attributes window into the scene window.

I then altered the colour of the fog to match the colour of the sky colour until I was happy with the overall fade effect. The resulting image was then exported as a sprite and reduced in *ChangeFSI* to produced an anti-aliased image and that's it – one castle to order!

## The future

The construction of the castle scene has described the action of just a few of the tools available in *TopModel*. I hope I've been able to demonstrate that creating a relatively complex scene is not that difficult, but simply requires time and patience.

The advent of affordable digital cameras and cheap colour scanners also offers the exciting prospect of being able to import sprites ready for texture mapping, enabling even more realistic models to be produced. However, if you can't afford some of these luxuries, a good texture generator, such as the one produced by RComp, can be used to devise some nice finishes for objects which can often look just as good.

Furthermore, *TopModel* is under continual development and many new plug-ins are promised, offering features as diverse as inverse kinematics, radiosity and advanced animation facilities – so dive in. As they say, things can only get better! AU

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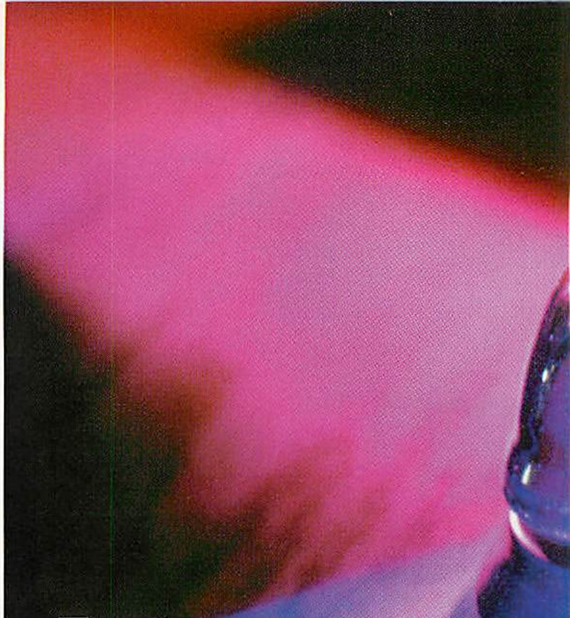
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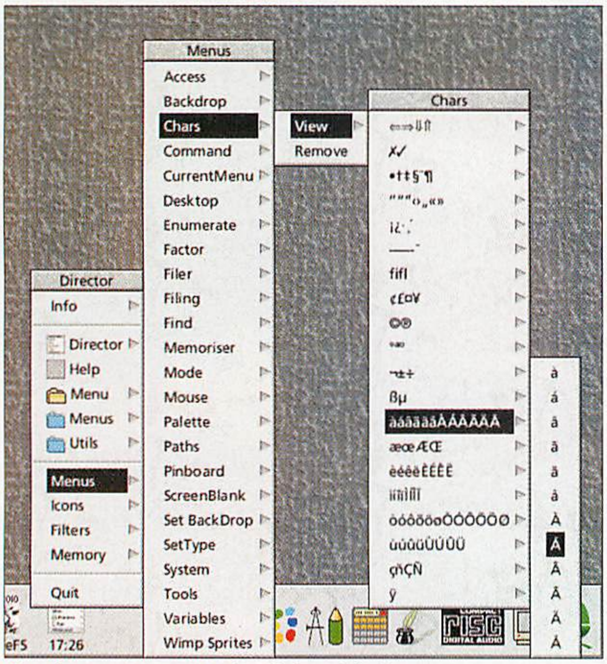
Desktop enhancers



# At your

**Simon Kiff** continues his examination of products to liven up your desktop

Last month we looked at desktop patches – programs that improve the operating system directly, either by providing new features or by improving the way parts of the desktop work. This month I will be taking a look at programs which make life easier around the desktop by speeding things up, helping you to keep organised or just by saving space.




Choosing an acute-accented capital A with Director

## Director – *Nick Craig-Wood*

*Director* is a "general purpose desktop tool", which sits on the left hand side of the iconbar. Clicking Select, Adjust or Menu over the icon brings up a different menu. The Select menu gives you access to all your drives as menu items. Every directory (including applications) opens a further sub-menu showing the contents of the directory, and clicking on a file will run them. This can be a very quick way to navigate your drive, since applications are given the generic 'application' icon and sprite files are not added to the sprite pool. This eliminates the wait as a new directory full of icons opens. This menu also gives you immediate access to the Modules, ScrapDir, Boot Dir and Library.

The menu which opens when you press Menu over the icon is a more traditional information menu. At the top is the standard 'Info' and, at the bottom, 'Quit'. It gives access to information on memory and access to custom menus.

These menus provide many functions such as changing the backdrop, selecting special characters (those used in foreign languages and other symbols) and changing the desktop mode. Just about anything you might want to do via the desktop can be automated with *Director*.

The right button opens a Pinboard menu, which will also open if you press Menu over the backdrop. This replaces the Acorn standard Pinboard menu and as well as opening *Director's* other two main menus it provides some other features, such as mode changing.

*Director* is the program you never realised you needed until you use it. It speeds up literally everything and you can customise it however you like, providing you don't mind messing around with some files. Although it is not really for the beginner, it is perfectly useable in its unmodified state and is a very useful addition to your boot sequence. The more you use it, the faster it becomes and the more you realise you can't live without it.

## WorkSpace – *David J. Ruck*

*Workspace* provides the user with six virtual desktops. The program shows six screen icons on the left hand side of the iconbar and clicking on each will flick to that desktop. Each can have its own screen mode, so you could use one desktop with lots of colours for doing graphics work, while another larger mode is letting you do some typesetting or DTP work. Each desktop keeps its own set of windows, so if you




WorkSpace is a little obtrusive on the iconbar

## MegaBoard – *Sham Gardner*

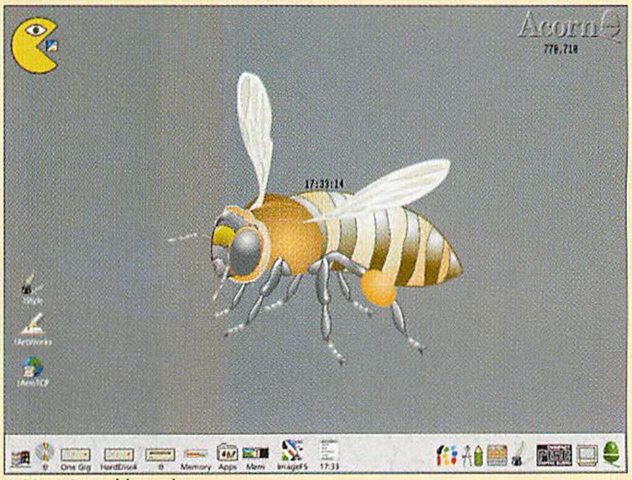
*MegaBoard* directly replaces Acorn's Pinboard. When you first load it up, your backdrop disappears and clicking Menu over the Pinboard produces a new menu. As with Acorn's offering, files, applications and directories can be added to the backdrop by dragging them from a filer window and then moved around by dragging.

There is more control over the background image. This can either be a Drawfile or a Sprite – and there is more control over scaling and tiling. Using a Drawfile means that the backdrop will take much less memory – but the chances are the image will have to be much simpler.

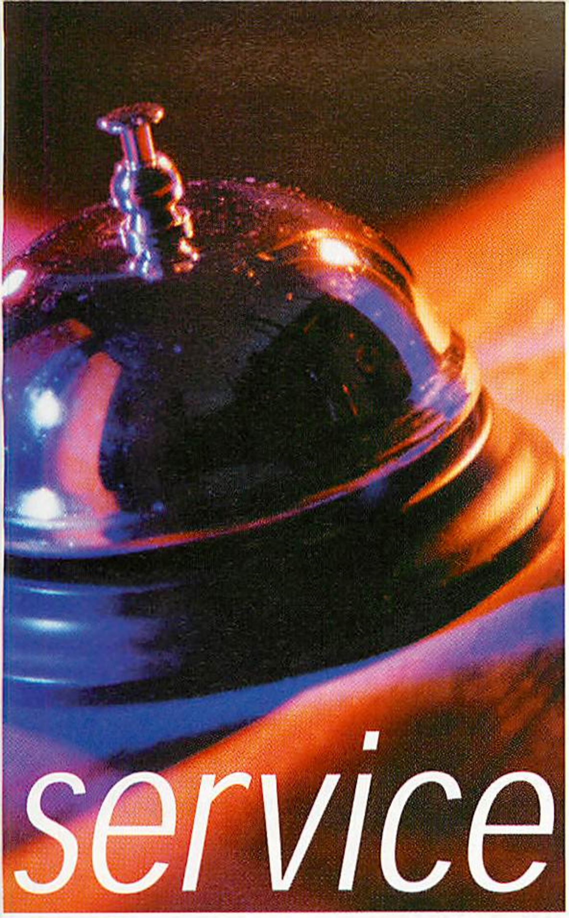
*MegaBoard* also has a number of special icons: You can have the three-dimensional Acorn logo displayed in the top right corner. You can also have a small clock or pointer co-ordinates which update on the fly and a gobbler icon lets you drop on files to have them deleted.

Finally, you are not restricted to one set of pinned files and applications. You can create extra 'surfaces' which get their own icon on the main Pinboard. Double-clicking removes all the pinned icons and adds the new ones for the new surface. Double-clicking with Adjust takes you back to the previous parent surface. In this way you can have different selections of programs for use at different times – in the same way you would have different bars in *MenuBar* or different worktops in *Worktop.*

I quite liked this program – it certainly does more than Acorn's Pinboard, but unless you use the Pinboard a lot (which surprisingly few people do), it's unlikely to prove particularly useful. If you do use the Pinboard this is for you, particularly with its more comprehensive backdrop options.



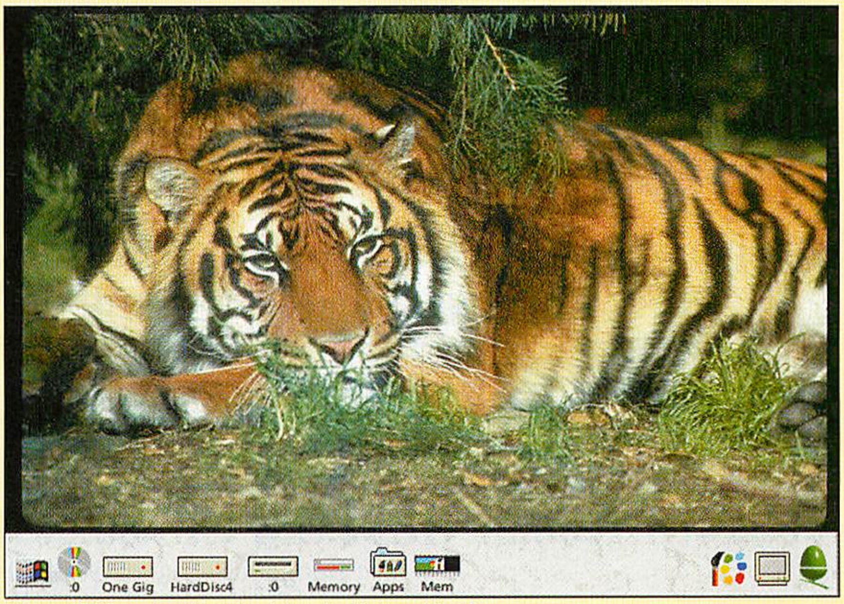

A MegaBoard in action




open one in one desktop it will not be visible in the others. This means that graphics software can stay separate from DTP or music typesetting.

The only niggle I have with this software is the amount of iconbar space it takes up – with six large icons representing the different desktops. A better solution would have been one icon divided into six parts, which could be individually clicked.

## Pinboard Patch – *Matthew Bullock*




A large JPEG rendered as a backdrop by Pinboard Patch

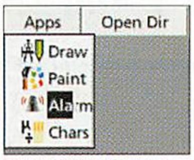
Although this doesn't make the desktop easier to use, it does form a natural progression from the last review, so has been included for completeness.

This patch lets you use JPEGs instead of sprites for the backdrop, using the fast JPEG redraw, as well as fixing a few minor bugs in the Pinboard. In operation, the Pinboard remains unchanged, but clicking over a JPEG allows you to 'Make Backdrop' as you would with a sprite.

This saves a lot of memory if you want a huge background image with lots of colours, although the JPEG is marginally slower to update than a sprite would be. Any sprites you already use can easily be converted using *ChangeFSI*. The backdrop shown is a mere 90K rather than over 700K.

## WimpBar2 – *Technium 220*

*WimpBar2* is another "drop down menu" style desktop assistant. It is slightly more difficult to use – all the settings have to be modified from a text file – but this does mean that it can be more flexible.



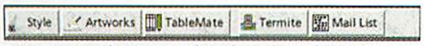

WimpBar2 offering some applications

You can create menu items which run macros, load programs or files and even act on files dragged to the bar. The program comes with a comprehensive *StrongHelp* manual, which explains how to create all the different types of buttons. *WimpBar2* can be downloaded from Technium's website.

## ExtraBar – *David McCormack*

*ExtraBar* is another bar across the top of the desktop, but this one does not use drop down menus. Instead, it lets you create a number of buttons and then save different bars as files, so they can be loaded in at any stage. Each button has configurable text and its own icon. Each is assigned a Select and Adjust click action, all from within a window.

There are many different actions that buttons can carry out. They can run files, launch Web addresses, enter text at the cursor and many more. Full details are given in the user manual. You can also specify a Dynamic Display button, which can be the time, date or free memory. Full control is given over the display of the buttons, including where the sprite is placed, and whether the button has a small gap after it – allowing you to group similar buttons.




ExtraBar uses buttons rather than drop-down menus

I would find this program useful and it could be used in conjunction with the other bars, since it can be forced to the bottom or to float. With a little fiddling you could automate a lot of desktop tasks and make your life a whole lot easier.

## Acorn Office '98 – *Peter Price and Andrew Ayre*

*Acorn Office* is a snazzy looking toolbar, vertically orientated, which contains a number of configurable buttons. Each one can (at the moment) run any file or application. Although simple, this could be just the program many parents are looking for to let their children easily access a few programs without them needing to traverse the directory structure of the hard disc. It also has a shutdown icon, which means that after they've finished with their software the kids could shut down and switch off the computer.

That said, this program could also be used by adults to give easy access to their favourite programs. *Office '98* comes with a number of useful icons for use as buttons. It should be noted that *Acorn Office '98* is "not connected in any way to the Acorn Group PLC"

## Conclusions

I have given you a round-up of programs, many of them performing similar functions, and now the best way to make the decision is to try a few out. All can be tried for free and many are full versions. I hope I have given you an opportunity to improve your desktop. I look forward to seeing how many of these programs will still be needed when Phoebe 2100 is finalised. AU

## Where to get it

Director
*http://www.axis.demon.co.uk*

ExtraBar
*http://www.atlantic.oaktree.co.uk*

MegaBoard
*FTP://ftp.demon.co.uk/pub/mirrors/hensa/local/riscos/desktop/megaboard.zip*

Acorn Office '98
*http://www.everymans.com/acornoffice*

Pinboard Patch
*http://dialspace.dial.pipex.com/matthew.bullock/*

WimpBar
*http://www.dcs.shef.ac.uk/~u5sap/*
*or: http://www.technium.demon.co.uk*

WorkSpace
*via The ARM Club*

# All that's fit to print–*part 4*

**Ian Burley** and **Jack Kreindler** finish off our printer round-up




Win an Olivetti printer. Turn to page 58

As we reflected last month, the inkjet printer establishment is under fire from two up-and-coming manufacturers; Epson and Lexmark. In truth, the term 'up-and-coming' couldn't be more inappropriate for these two as Epson have been around since the early impact dot-matrix days and Lexmark were once IBM's printer division until they were spun-off as an independent company a few years back.

However, it is only recently that either has enjoyed substantial success in the inkjet stakes. Both companies can boast interesting print-head technology which enables them to claim the highest print-resolution in the industry. Both can also claim very high quality in the area of photo-printing through the use of intermediate colour ink tones. In the past, both have been unable to combine advanced features with low prices, but they are now very competitive on price when compared with the usual suspects; Canon and Hewlett-Packard.

## Epson piezo action

You might recall from science lessons something called the piezo-electric effect. A material exhibiting this characteristic can generate a sharp voltage when it is mechanically stressed. The effect also works in reverse – apply a voltage across some piezo-electric material and it produces a mechanical action.

Epson are unique in the conventional liquid inkjet printer industry to use piezo-electric head technology - after all, they own the patent. Only Tektronix, which produces colour inkjet printers that use dyed molten wax instead of water or other solvent-based inks, also uses piezo-electric print head technology. Their process involves printing onto a drum and then applying the image in one go onto the paper.

Piezo-electric heads are theoretically superior to conventional ➤

'thermal' inkjet print heads because more ink droplets can be squirted from the head in a given time. Beyond a certain rate, thermal heads break down because the tiny channels which heat up and vaporise the ink into a jet which hits the paper don't have enough time to cool down before the next charge of ink arrives. With piezo-electric heads you don't heat the ink up in the first place - the ink is mechanically squeezed at high pressure through the print head nozzles. Epson claim that their technology is more reliable and more consistent as well as faster.

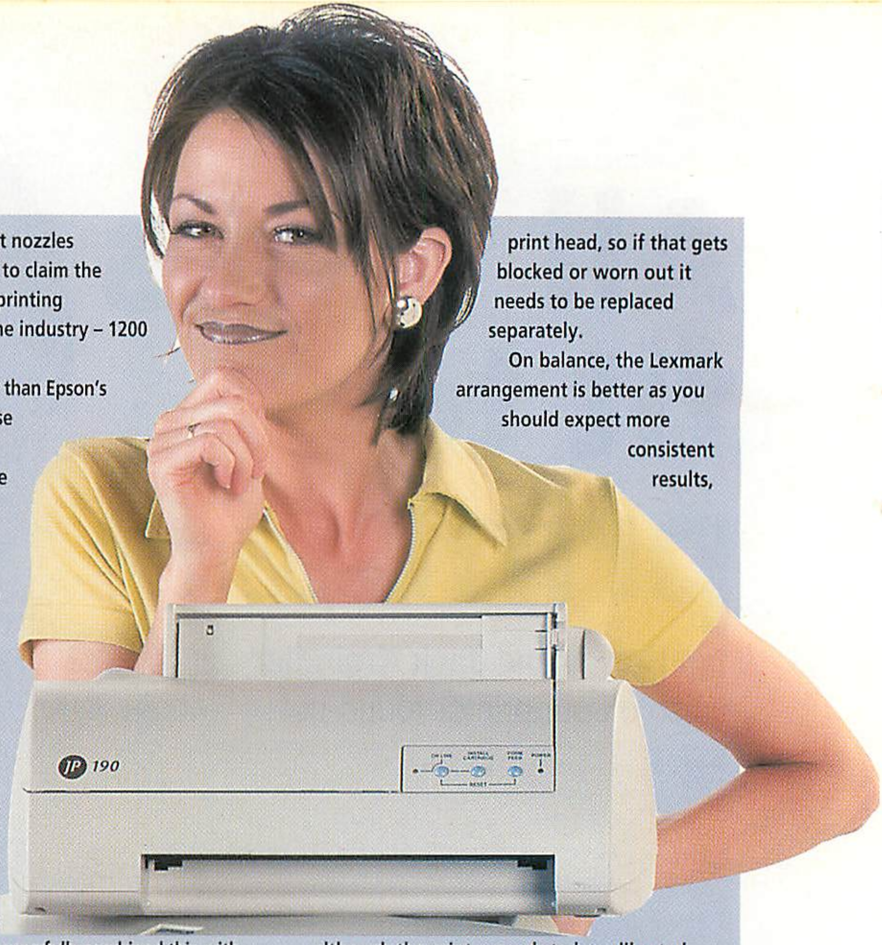
Certainly, when the first mono Epson Stylus printer using piezo technology was introduced, it brought inkjets closer than ever to the quality of laser print. Unfortunately, Epson's basic printer mechanism and case design left a lot to be desired and early Epson inkjets were monstrous noisy things.

The current generation of Stylus printers are compact and stylish, though they still clatter and whirr more than, say, the average Canon. Epson were also the first inkjet manufacturer to produce a model aimed squarely at people mainly looking to produce photos. The Epson Stylus Photo included a six-colour complement of inks as standard and using photo paper you are hard pressed to see dots without a magnifying glass.

All the Epson printers judged here have a separate true black ink cartridge so there is no compromise when printing plain text or colour with black. Epson have been consistently winning reviewer's plaudits with the current Stylus range.

## Lexmark laser-enhanced inkjets

In computer printing the word 'laser' is more usually associated with laser printers. Lexmark, however, boast of their use of lasers to etch ultra-fine inkjet nozzles enabling them to claim the highest inkjet printing resolution in the industry – 1200 dots per inch.




That's better than Epson's 1440 dpi because Lexmark's top printers produce a genuine 1200x1200 dpi (1.44 million dots per square inch), while Epson make do with 1440x720 dpi (1.036 million dots per square inch). Lexmark use conventional thermal inkjet head technology, yet seem to have successfully combined this with enough speed to produce consistently high resolution results. Lexmark also have photo cartridge options with extra colour shades to paint more subtle tones on special paper.

Another trick Lexmark have introduced is a novel patented paper feed system which the company claim is so accurate that you can feed the same sheet through twice and you won't see any ghosted double printing. We've tried it on the 5700 model and it really works.

As Lexmark inkjet cartridges contain the actual print head, every time you run out of ink and replace the cartridge, you get a new set of heads. Most other printers have a separate print head, so if that gets blocked or worn out it needs to be replaced separately.

On balance, the Lexmark arrangement is better as you should expect more consistent results, although the printer needs to be calibrated every time you change the ink cartridge – a simple process involving printing a calibration sheet and choosing the closest match between pairs of fine lines.

Print heads can be quite expensive to replace as well – some £80 for my elderly Canon BJC-600, for example – though Lexmark cartridges are slightly more expensive, so over the lifetime of the printer there may not be that much difference in cost overall.

Mechanically, Lexmark have done a good job in keeping the din to a minimum and the printers we saw seemed more refined than their Epson counterparts.

## Epson Stylus Color 600

This is Epson's real success story, heading the colour inkjet sales charts for the last year. The 600 offers a crisp 1440x720 dpi and although there is no photo cartridge option, the printer is capable of some



impressive photo printing given the right combination of paper and resolution.

Some even say it produces marginally better results than its more expensive, but faster, sibling the Stylus Color 800. At well under £200, the 600 is remarkable value for money.



## Epson Stylus Color 800

Externally, it is very difficult to distinguish the 800 from the 600. Internally, the big difference is that the 800's print head has twice as many nozzles – 128 versus the 600's 64. The mechanical speed of the print head is actually the same as the 600 model, but it can print twice as many dots in the same time.

The theory as to why the 800 isn't quite as good as the 600 in quality terms is that any discrepancies in calibration of the head will be more visible with twice as many nozzles. On paper the 800 is quieter than its 600 sibling but overall, the 600 is better value unless speed is a must.

## Epson Stylus Color 850

This is a slightly more expensive alternative to the 800 model. It's marginally faster, uses an slightly improved ink to control dot sizes better and there is an Ethernet network interface card option so ➤



it can be incorporated into a network without needing to be hosted by a computer.

## Epson Stylus Photo

This is only a 720 dpi model, but you'd never guess judging by the results. This is



Epson's first 'photo' printer using intermediate colour tones. Lighter coloured dots can be printed and they almost disappear – especially when using expensive glossy photo paper which absorbs the ink better.

The Stylus Photo is noticeable slower than the 600, for example, but that's already a fast printer by its class standards, so the Photo can actually be used happily as an all-round printer. A recent price-cut has made this printer even more attractive.

## Epson Stylus Photo 700

This is the latest Epson model to sport a photo ink cartridge system and it benefits



from Epson's trademark maximum resolution of 1440 dpi. On paper it's faster and better quality than the original Photo model.

## Lexmark Color Jetprinter 5000

This is the cheaper of the two 500-series Jetprinters Lexmark offers. It has a 1200x600 maximum resolution and a



photo ink cartridge option. We expected the photo cartridge to be in the box but it's not – be warned.

Compared to the noise of the Epson printers, the Lexmarks are very refined and results are very good indeed. Paper

# Printer comparisons

The first major breakthrough in desktop colour printing came over five years ago with the entrance of low cost inkjet printers. At this time, the best desktop colour printers boasted resolutions of 300 to 360 dots per inch (dpi) which, compared to the front runners of today, seems poor.

Graphics users have recently enjoyed another breakthrough in colour printing in the form of 'photo realism'. Most colour inkjet manufacturers now claim that their 1200 or 1400 dpi printers, using anything from five to seven colour ink systems, can produce prints indistinguishable from photographs at arm's length.

But, while some manufacturers are well justified in their claims and have proven themselves over time, others are relatively new to the game and some appear to have used the hype for sales purposes but using old technology.

This month we look at Lexmark's 5000 and 5700 and Epson's Stylus Photo and Stylus Photo 700.

Again we must make it clear that these printers were not reviewed using RISC OS printer drivers. It is much to the shame of the platform that neither Acorn nor any third-party have kept up with the technological breakthroughs in printing and written software to fully utilise the potential of the latest inkjets. But many users have PC co-processors or podules in their machines and have taken advantage of Windows printer drivers.

For this review I used a RiscPC with 100MHz 486 PC second processor running Windows95 and *CorelXara* as the graphics software because of its ability to load *ArtWorks* or *Draw* EPS files and print bitmaps exported from RISC OS packages without fuss. For bitmap artwork and vector graphics this is fine but unfortunately printing DTP files from RISC OS software like *OvationPro* will have to wait until Acorn or someone out there writes the drivers.

## The battle

The previous lot of graphics printers reviewed were not closely matched for cost or ability. The selection of printers on test this time round were all very much designed for the same purpose and are in the £200 price bracket.

Epson have been recognised as one the pioneers of inkjet printing technology since their introduction of the Stylus many years ago. For graphics printing, the current Epson Stylus Photo printers boast 1440 x 720 dpi resolution and six colour, variable density inks.

Lexmark have not been at the forefront of graphics printing for long, but the launch of their extremely cheap 5000 and only slightly more expensive 1200 x 1200 dpi variant – the 5700 – has taken them into direct competition with Canon and Epson in the photo-reality stakes.

## Setting up & use

Both the Lexmarks and the Epsons used a dual cartridge systems. The Epson, however, needed no changing of ink cartridges for photo-real printing as it can only accommodate the five colour photo ink cartridge plus black cartridge as standard. The Epson software was also quicker to install. Pop in the CD-ROM driver disc and simply follow the automated prompts. Two clicks later and it was all installed. The Lexmark software was hardly a job for a rocket scientist either, taking very little time or effort to install.

Living with any of these printers would not be a problem. Subjectively, I much preferred the design of the Epsons which had a few controls on the front and a more solid, high-tech shell. The Lexmarks look nice in their rounded exoskeletons but as a result they are a little fragile. An occasional annoyance was the lack of a reset or On/Off button for the Lexmarks, which caused problems when problem files upset the printing. The noise levels and warm-up times were good for the Epsons and the Lexmarks were the quietest and least fussy on start-up of all the manufacturers on tested.

## Software

Lexmark really seem to have addressed the problems of user interface very well with their printer driver products. The utilities windows enable the user to select the desired print mode very quickly in one window and carry out all calibration and cleaning operations in another. The ink level monitor looked very impressive, but how accurate it was couldn't be ascertained.

The Epson driver was trickier to navigate. There was a More Options window with loads more options some of which were seemed to repeat what was selected before, but it did not take long to learn the ropes.

handling is especially good, capable of dealing with quite thick card.

### Lexmark Color Jetprinter 5700

This is the 1200x1200 dpi version of the



5000. Some have complained it's difficult to see any difference in quality between the two. The extra resolution also makes the printer slower. There is no power switch on either of the Lexmarks, all you get is a form feed button and a rather dim LED to indicate that anything happening.

## Product details

**Availability:** Contact your local dealer

| **Epson** | Tel: 01442-261144 |
|---|---|
| Stylus Color 600 | £174 |
| Stylus Color 800 | £271 |
| Stylus Color 850 | £319 |
| Stylus Photo | £232 |
| Stylus Color 700 | £271 |

| **Lexmark** | Tel: 01628 480531 |
|---|---|
| Color Jetprinter 5000 | £180 |
| Color Jetprinter 5700 | £230 |

*All RRP (ex VAT) correct at time of going to press*

**Printer Definition Files:**
The Cybervillage site (http://www.cybervillage.co.uk/acorn) is a good source of up-to-date info

## Printer driver issues

None of the Lexmark or Epson models we looked at are currently supported natively by Acorn in the form of printer drivers. Until recently, if you wanted to use any of these printers natively under RISC OS you'd have to use Epson LQ or IBM ProPrinter emulation and these generally rule out most of the printers' best features.

Luckily, Spacetech have just announced they are going to support Epson Photo printers with their own RISC OS printer drivers, with support for others including the Canon BJC-7000 in the pipeline.

Acorn are also promising to look at extending their driver range, but until then you will have to rely on a PC card and Windows drivers to get the best out of these printers.

## The winning printer

Last month's winner by a considerable margin was the Canon BJ-7000. In this company the champion instantly pales into a relatively weak Bronze medal position. Except for the light colours and skin tones of the Lexmark prints, the 5000, 5700, Photo and Photo 700 all produce better quality bitmap and vector images than the flagship Canon.

Taking the Lexmark printers to begin with; the 5000 was a surprisingly fast and high-quality printer that resolved only half the number of dots on each square inch of paper than the 5700 but didn't seem to suffer too much for it. In fact, the highest resolution setting for the 5700 (1200x1200 dpi) was slower than the 5000 and caused certain memory and rendering problems with the application we were printing from; this meant that bitmaps and vectors had to be printed separately to achieve the best results for each type of graphic.

The exact cause of this problem was never fully established but a similar phenomenon occurred when using the lower resolution, 720 dpi Epson Stylus Photo and the 1440 dpi Photo 700.

Although there was not much to choose between the less and more expensive models for a given manufacturer, especially with the Lexmarks, it was quite clear that the Epson Stylus Photo range generate the highest quality output of any desktop inkjet printers on the market. It was quite astonishing to see the reactions of colleagues passing by the desk after picking up the Epson 700 test print. The look on people's faces when announcing to them that the printer costs just over £200 before VAT is a sight to behold, as is the photo-realism of the output.

While you do have to move closer than reading distance to observe the fine dithering and regular 1mm banding on the Lexmark prints, the Epson printers demand forensic-level investigations to see that this is not a continuous tone printout. At half reading distance, the trained eye can just about determine that dots compose the Epson images. The 700 produces a considerably sharper image than the standard Photo but takes twice as long to print all those extra dots at its highest quality setting, and the colour matching is better due to the more up-to-date printer driver software.

So there is a clear winner. The Epson Stylus Photo 700 is the best printer for the graphics user. Close behind and still comfortably ahead of the chasing pack of Lexmarks and Canons is the older but cheaper Stylus Photo, which can also be the faster of the two Epson printers, if only because it cannot tempt you to print at the remarkable 1440 dpi that the 700 can.

And, as you read earlier, it's good news for Acorn users as Spacetech are in the final stages of writing specialised RISC OS drivers for the Epson Stylus Photo printers.

My hope now is that the new graphics packages for the Acorn will compliment the enormous advances made in affordable desktop colour printing that we have witnessed this year.



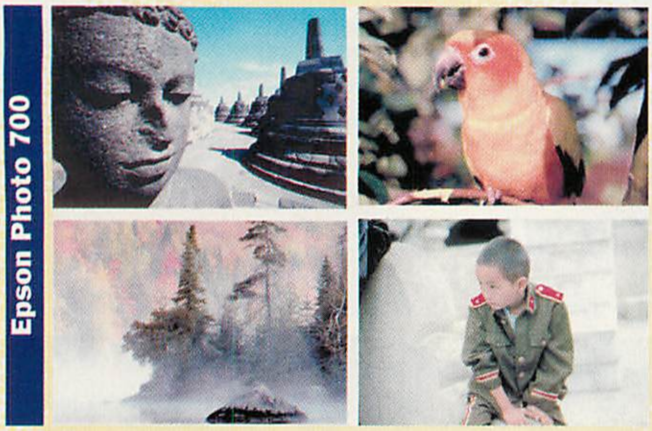

## The test page

The test page comprised of four photographic images, several colour test strips with colour blends and gradations, a complex colour vector graphic and plain black text ranging from 14pt to 6pt. This put unusually high demands on the printers which in normal use would not be expected to reproduce such a variety of graphics except, perhaps, in DTP.

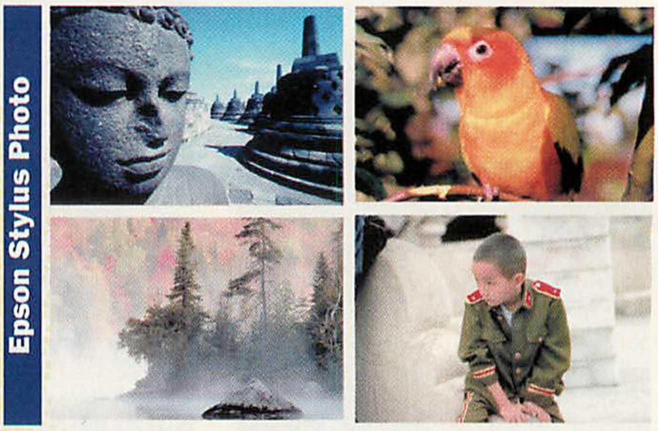
We only have space for some of the graphics, although the results of the test are outlined in the table at the end of the test page examples.

All the printer drivers offered settings such as Vector Graphics, Line Art, Photo, Vivid and such like, altering colour balance and ink density across the whole page.

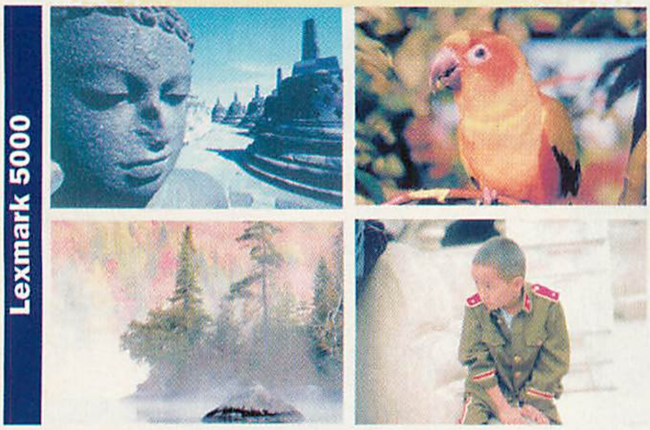
But it is no good buying a printer that can only satisfactorily print vector graphics and bitmaps separately, especially since existing and forthcoming graphics packages for RISC OS allow composition of both vector and bitmap artwork.



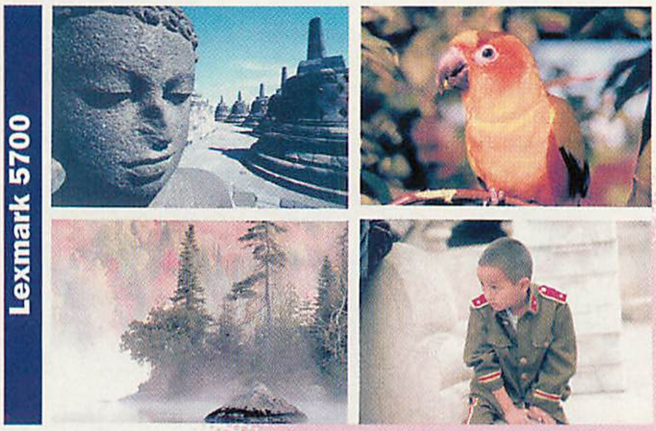

Excellent contrast and detail with vibrant and accurate colours and unmatched colour subtlety. Skin tones are excellent and detail in stonework is at least the equal of the Lexmark 5700




Excellent colour and contrast but the colours, through vibrant, are less accurate than the Epson Photo 700. Although the quality is similar to the Photo 700, there is slightly less detail




Smooth colour gradation, bright vibrant colours coupled with good tone subtlety and ability to handle skin tones. Suffered very slightly from banding. The dots were still visible and some colours looked a little washed out




Smooth colour gradation with better contrast than the Lexmark 5000 but slightly darker overall. The dots are visible but still excellent quality. Handles skin tones very well and stonework detail is excellent

| **TEST PAGE RESULTS** | **PRINTER NAME** | | | |
|---|---|---|---|---|
| | Lexmark 5000 | Lexmark 5700 | Epson Stylus Photo | Epson Stylus Photo 700 |
| **SPEED (to print test sheet)** | | | | |
| **Photo quality** | 10 minutes | 10 mins | 9 mins | 18 mins |
| **High quality**10 mins | 10 mins | | 9 mins | 9 mins |
| **GENERAL OBSERVATION** | | | | |
| **Photo-real at arm's length?** | Yes | Yes | Yes | Yes |
| **Artefacts** | 1mm horizontal banding | 1mm horizontal banding | None | None |
| **Overall colour matching** | Slightly pale | Excellent | Slightly dark & cyan | Excellent |
| **BITMAP GRAPHICS** | | | | |
| **Resolution and detail** | Very good | Excellent | Excellent | Excellent |
| **Light tones** | Very good | Very good | Excellent | Excellent |
| **Mid tones** | Excellent | Excellent | Excellent | Excellent |
| **Dark tones** | Very Good | Very good | Excellent | Excellent |
| **Flesh tones** | Very good | Very good | Excellent | Excellent |
| **Vivid colours** | Excellent | Excellent | Excellent | Excellent |
| **Contrast** | Good | Very good | Excellent | Excellent |
| **Colour gradations** | Excellent | Excellent | Excellent | Excellent |
| **VECTOR GRAPHICS** | | | | |
| **Colour gradations** | Very good | Very good | Excellent | Excellent |
| **Line art quality** | Very good | Excellent | Excellent | Excellent |
| **TEXT** | | | | |
| **Sharpness** | Very good | Excellent | Very good | Excellent |
| **Density** | Very good | Very good | Excellent | Excellent |

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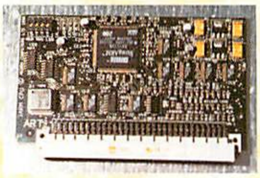
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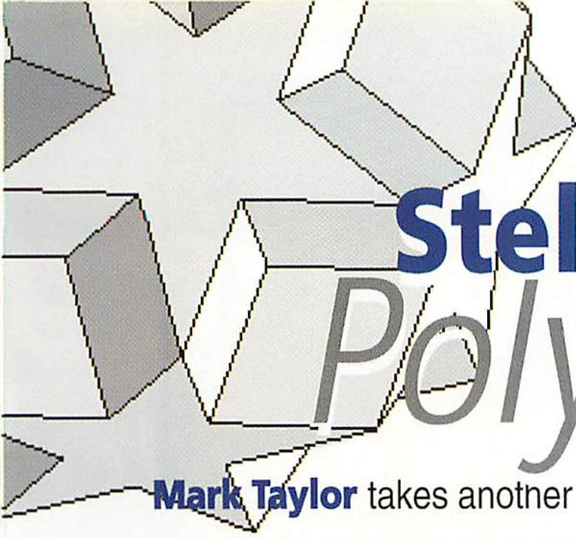
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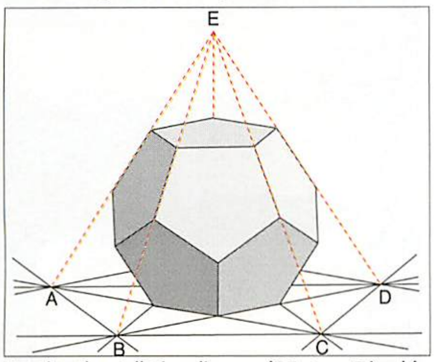
**Mark Taylor** takes another trip into the world of polyhedra

In the June issue I reviewed *PolyNet* and *PolyDraw*, the first two programs in Fortran Friends' polyhedra series which offered an excellent insight into the world of polyhedra. The next package in the series, *Stellate*, has now been released allowing the user to explore and display stellations of uniform polyhedra.

## What is a stellation?

If you stand a polyhedron on one face, in this example a dodecahedron, and then imagine projecting the other faces down on to the plane of that face, each will meet it at a line. These lines will join at points, in this example A,B,C and D of Figure I.

The diagram in the plane is the stellation diagram. If the faces are projected away from the plane they will meet at another point, in this case E and form a pentagonal pyramid standing on the face. By selecting areas of the stellation diagram you can form the faces of a new polyhedron. The polyhedron formed from these is called a stellation. Figure II shows some examples of stellated polyhedra and the faces used to create them.




Forming the stellation diagram (©Fortran Friends)

## Using Stellate

Once loaded, clicking on the iconbar icon brings up a list of stored solids from which stellations can be created.

It is also possible to create your own solids by choosing the face type and then the number and symmetry of each face. You can use up to three different faces to create your solid.

Once you have selected your solid or created your own, the parameters window appears. This shows the polyhedral components from which the shape is made, the radius of the solid and the radii of the component parts. The radius of the solid is user-configurable.

From the parameters window the user has three options when using a stored solid or one if it's your own solid. Plot solid shows the solid without any manipulation, auto-select plots the solid using the stored data and user-select, the only option available if using your own solid, allows you to create your own polyhedra and stellations.

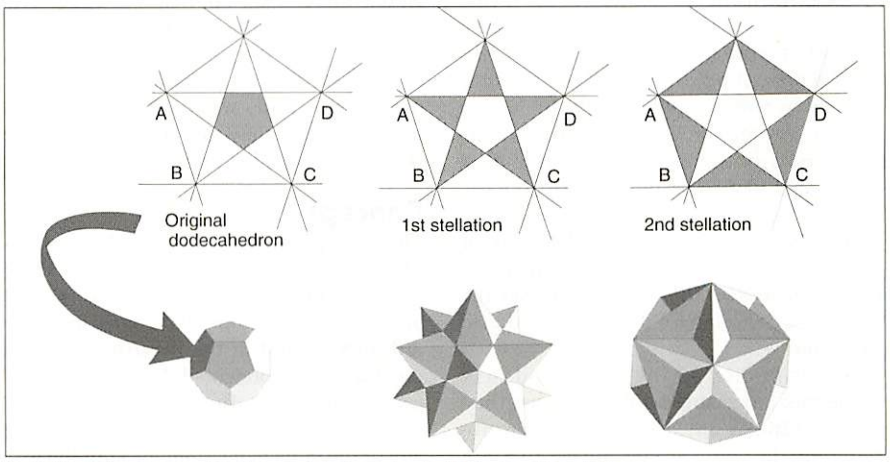
One niggle is that to return to the parameters window you have to click Adjust on the close icon of the open window. I personally feel some sort of menu option would have been preferable.

If you pick the user-select or auto-select option you are presented with a window showing the stellation diagram. If you chose the auto-select option the faces from which the polyhedra is to be formed have already been selected. If, however, you chose the user-select option the window is blank apart from the stellation diagram. The faces from which the polyhedron is to be created are selected by clicking on the relevant line on the stellation diagram. The user can choose faces to form both the back and front of the solid.

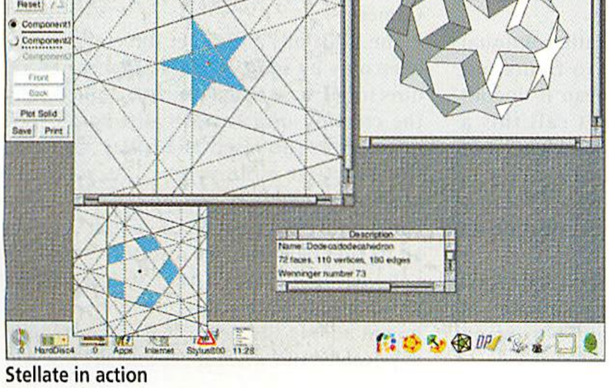
Once you are happy with the faces, clicking on plot-solid, brings up a plot of the solid and an information window giving the name, number of faces, vertices and edges of the solid. The solid can be manipulated in a number of different ways: rotated using the cursor keys; the size altered; reflected; plus a number of view options, wire outline, single colour, different colour, as a red/green stencil for use with the supplied 3D glasses. with or without perspective.

The program also allows you to view the shape using a light source to give a shaded effect. The light can be placed anywhere around the shape giving a number of different effects.

Once you are happy with the solid it can be saved in a number of formats: drawfile; text data; and as a PolyData file for use in Fortran's other programs, *PolyNet* and *PolyDraw*. From these packages you can further manipulate the solid and print nets allowing you to make a physical model of the solid.




Stellation diagrams and their associated polyhedra (©Fortran Friends)



Stellate in action

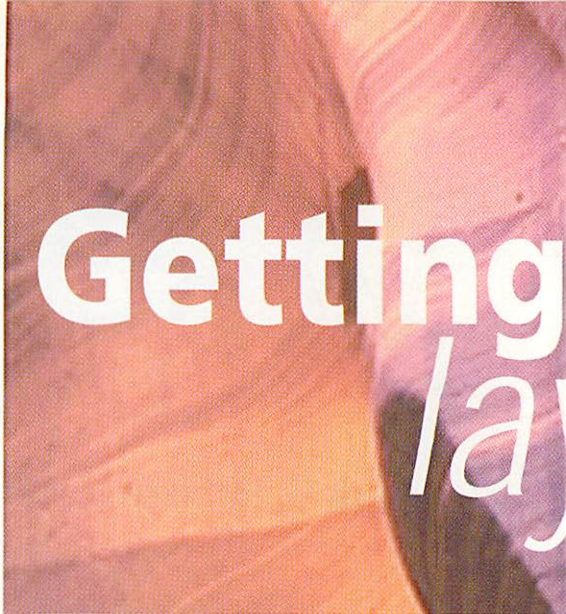
## Overall

*Stellate* is another excellent addition to Fortran Friends polyhedra series and highly recommended. The program is well written and in my experience very stable. *Stellate* integrates very well with the other programs in the series.

The program has many obvious uses in mathematics departments in secondary schools but would also be of interest to adults who wish to create interesting decorative clipart.

### Product Information

| | |
|---|---|
| Product : | Stellate |
| Price : | £20 (discounts apply if bought with others in Polyhedra series) |
| Supplier : | Fortran Friends |
| Address : | PO Box 64, Didcot. OX11 0TH |
| Telephone: | 01235-834357 |
| WWW : | http://www.acorn.com/developers/fortran/ |






It's been one of those weeks for me. You know the kind – hours spent in front of your machine, hours of frustration. You want to reorganise your hard disc, but can't work out whether to file your new word processing cum *Quake* clone under DTP or games.

You want to add another 63 dodgy images to your even more dodgy collection of www acquired JPEGs, but the filer won't let you as it can't count higher than 77. You want to incrementally back-up the latest version of the Manga animation screen saver you've been writing for the last six years and still be able to run it from just the partial back-up. What are you to do?

Read on is the answer, for Feldner & Braun have the solution, in the form of their *LayerFS* image filing system.

## Image filing what?

Every new user of RISC OS soon becomes acquainted with its filing system, which is so simple and intuitive to use. The directory and file icons are familiar to all – with the little blue folders used to group their contents hierarchically and assorted file icons representing different types of data, accessed by various applications.

Not everybody is equally familiar with image files however, those strange new objects that RISC OS 3 introduced. To most users they are directories, albeit with funny icons, whose contents can only be accessed after some special application or other has been seen by the filer. Common uses for these include compressed archives and disc partitions.

Your hard disc, on the other hand, sees image files rather differently. It knows they are files, just like any other. So what's really going on? In point of fact, image files are just files with a single extra piece of information which records that the object is to be interpreted as both file and directory.

This is used by the filer to enable it to ensure the data is stored on your physical disc as a file but, in other situations, gets treated like a directory. It provides a clean simple method for the extension of the filing system.

When an image file is double-clicked on from within the desktop, or an attempt is made to catalogue its contents from the command line – something which makes no sense to the native filer – for example, the filing system asks around, to see if there is a module providing support for image files of the given type.

If it finds one, it lets that module deal with extracting the relevant information from the file, which gets passed back to the filing system for it to return to the instigator of the request. Thus the whole process is transparent to the user, yet at the same time lets the image filing system in question store its data however it likes.

Essentially, the concept of an image filing system permits a single gateway allowing communication between the native filing system and arbitrary new forms.

## LayerFS

OK, so *LayerFS* is an image filing system, but for what purpose? The easiest way to answer this is to look at how it stores its data. Each *LayerFS* image file, known as a LayerDir, contains no more than a list of redirections to directory locations elsewhere within the conventional filing system. Thus, unlike partitions and archives, it doesn't directly store any files!

At its simplest level a LayerDir can contain a single reference to another directory. When an attempt is made to open the Layerdir, you see all the files and directories contained within that other directory. Any attempt to read or write files into the Layerdir will read/write to the redirected directory.

In this way you can create an apparent copy of a directory, which can have a different name if you want, without using up the disc space needed to duplicate the files. In fact this will use very little space – more or less just the space needed to store the source directory's path. As well as conventional directories, application directories can be cloned in this fashion.

*LayerFS*, however, goes much further than this. A LayerDir can contain a list of several directories and, when the LayerDir is opened, it will show the results of merging the contents of all of these directories.

## Concept

The concept of layering is introduced when one asks what happens if several of these contain objects of the same name. The answer is that the one that comes from the directory highest in the LayerDir list is the one that gets represented. You can think of each of the source directories as being overlaid, one upon another, with files hiding any of the same name from lower in the list.

This is all well and good when it comes to reading data out of a LayerDir, but what about writing to it if it is no more than an amalgam of data from several locations? This is catered for by giving the top directory in any list a special status – it is the one that any writes to the LayerDir will go into.

Now, usually by the time one gets to the point of having described what a package does and how it does it, one has a pretty good idea of what it's for. Yet it wouldn't surprise me if you're sitting back saying 'erm, yes, but why bother?' I thought something similar after reading the product description.

Perhaps because this is a rather unusual item it takes a little while to figure out what to use it for. I don't mean it doesn't have a purpose – I wouldn't call this a clever solution looking for a problem – but rather, that the benefits it can give you may not be immediately obvious because you have never been given a solution to such problems before.

So, before passing judgement, let's look at a few things that *LayerFS* enables us to do. You might find yourself becoming increasingly interested.

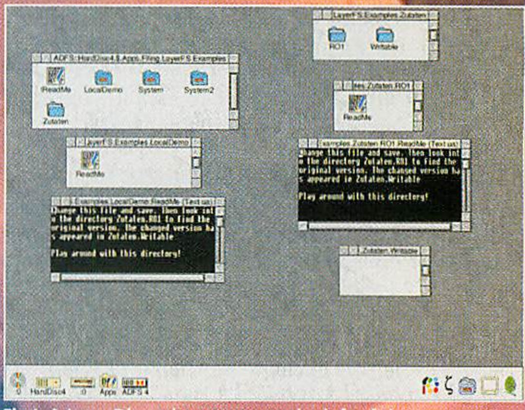


Fig I: A LayerDir and contents, to the left of the actual directories it refers to

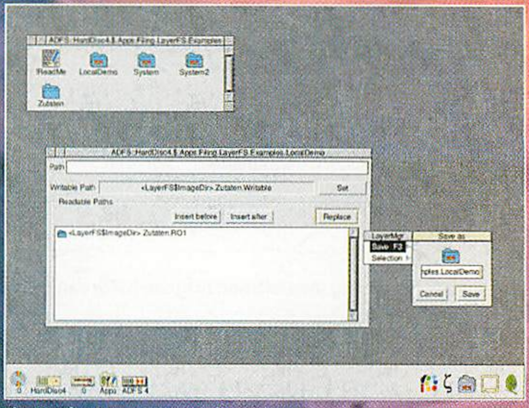


Fig III: The LayerMgr application

## Applications

I mentioned in my somewhat rambling introduction several applications - those with an attention span slightly greater than that of a goldfish might remember them.

• Your new wordprocessor with built-in game can be filed under DTP and a virtual clone, courtesy of *LayerFS*, filed under Games.

• The limit of 77 files per directory can be overcome by splitting files between several directories, as is usual practice, followed by the creation of a LayerDir listing all such directories. The result is all files appear in the one filer window – wonderful, and actually essential, if you want to run some batch processing application that requires all its files be in the one directory.

Remember though that writes will be channelled to the top directory only, so if you intend adding files leave that as near empty as possible. And when it does fill up, just add

# yered

**Stephen Baxter** shows you how

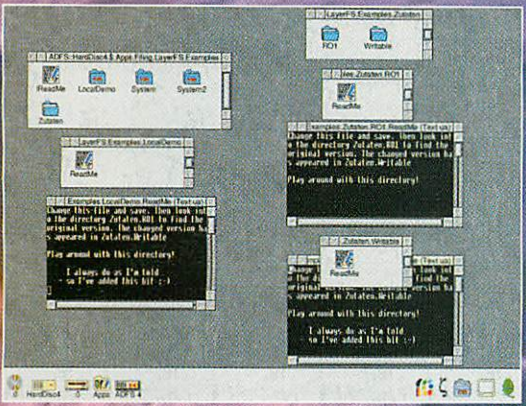


Fig II: Showing the file structure after altering the LayerDir's contents

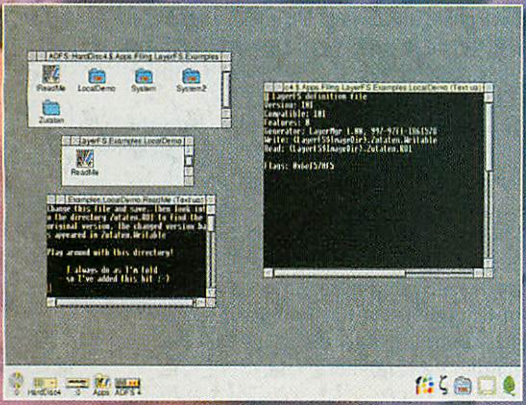


Fig IV: A peek inside the LayerDir image file itself

another directory to the top of the list.

• As to the incremental backup problem, if you create a LayerDir consisting of an empty directory and the directory containing a full backup of the original files, a subsequent incremental backup can be performed merely by 'copying' the whole collection of files into the LayerDir, first ensuring filer option newer is ticked.

This results in only the files which have been modified since the full backup being copied and because writes go into the blank directory, no part of your initial full backup actually gets overwritten.

To perform any subsequent incremental backups, add another empty directory to the top of the LayerDir list and copy into the LayerDir as before.

What's more, because the LayerDir displays its contents merged, what you see within the LayerDir is the latest incarnation of a full backup, so you can even run your code from within there. Figures I and II illustrate a simple LayerDir called LocalDemo, consisting of two directories Zutaten.Writable and Zutaten.RO1, with initially, a single file in Writable.

Figure II shows what happens when this file is loaded, modified and resaved, all via the LayerDir. It appears to have overwritten the old file in the LayerDir on the left, but examining the files on the right shows we now have both stored safely.

Any attempt to delete the file in the LayerDir will result in the writable copy only being deleted, revealing the original version below.

This example also shows how directories in a LayerDir don't have to be specified via absolute paths – they can instead be given relative to the location of the LayerDir itself, a very handy feature.

• Many applications arrive on a read-only medium, such as CD, and have to be copied across to your hard disc, taking up vast quantities of space, because they require write access to a tiny internal choices file, or some such.

By creating a LayerDir with an empty writable directory on your hard disc and one read-only pointing to the CD, you can access the application off CD, knowing that when it tries to save its choices file back inside itself, *LayerFS* will redirect this to the writable directory.

I wonder if this would work across a network? If it did, it could give individual users their own personal choices file.

• Should you use your computer for work that involves large collections of files, such as downloading news, you might wish to save storage space by archiving the old ones. This creates one of two problems. Either you pack the lot into a writable archive and face slow access to the recent items as well or you split them into old and new, with the inconvenience of having to manage these separately.

*LayerFS* again gives a solution. Use a LayerDir containing the old files in an archive and the new in an ordinary directory overlaid on top. Access is rapid to the new uncompressed files, but without losing the single consistent and transparent interface giving read access to the old files as well.

## LayerFS in use

There's not a great deal to this, in a positive sense. You get a couple of modules that give access to existing LayerDirs, which can be installed into !Boot, if you want them active all the time.

In addition there is an application, called LayerMgr, shown in Figure III, which is used to create and edit the structure of LayerDirs. Since this consists of specifying a list of directory paths and nothing else, it needs to do little, though what it does do, it does reasonably well. I quite liked it.

The package comes with an illustrated manual that I'm told will probably be A5 in the final release, though mine was A4. This is short, comprehensive and for the most part easy to read – not bad given that I think English must be the author's second language. It certainly puts some other attempts at documentation to shame.

You'll also find that LayerDir images themselves can be loaded into some text editors, such as *Zap*. This reveals their content to be intelligible text, Figure IV showing one.

I can't say for certain whether it's safe to edit this by hand, but I've tried and it seems to work, so programmers could even write their own interfaces for the creation and management of LayerDirs if they wanted.

I do have some gripes. There were one or two teething troubles getting it to run on a new SARPC with the latest !Boot structure and the LayerMgr code is ill-behaved in one or two respects – for instance, when the editor window is open, key presses don't get passed on, so F12 fails to take you to the command line.

Also, one of the examples meant to show *LayerFS* in use was broken, as it contained paths specific to someone else's hard disc, which could easily have been avoided via use of system variables.

These aren't a major concern however, and I would expect, with feedback, they will be fixed. There are a number of options I'd like to see added, such as a local option to allow deletion of files within a LayerDir from the topmost layer containing the named file, not merely from the topmost layer. This is an idea for the future, however, and the developers seem keen on comment, so perhaps there is a chance that users' suggestions will be incorporated.

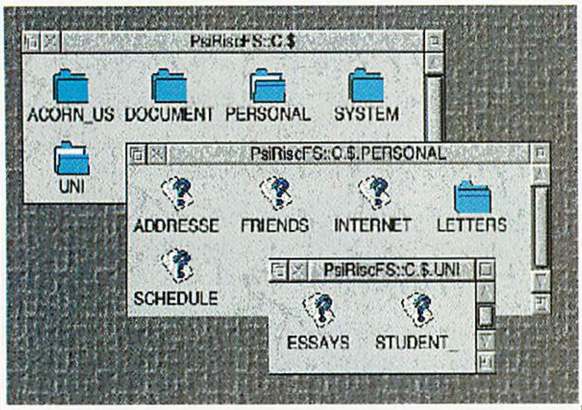
My main concern is the price. For me, £42 is a lot of money and I need a good reason to part with it. If I made serious use of one of the application areas I've outlined, I would certainly consider buying *LayerFS*. As it is, as an aide to simplifying certain desktop activities, I personally wouldn't be willing to spend more than about £20 or so on a package such as this.

The idea is very clever and the execution pretty good, but I don't think it warrants a price tag of over £40. Still, you pays your money and takes your choice. There was an introductory offer of £24.50, but I believe that expired at the end of May. Why not pay their website a visit and perhaps e-mail them to see if they're offering any special offers at the minute?

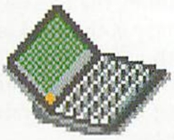
AU

## Product details

Product: LayerFS
Supplier: Feldner & Braun Software GdbR
Price: £39 + £3 p&p, inc VAT
Address: Fichtestraße 33, D-95445 Bayreuth, Germany
Tel: +49 921 47463
E-mail: bt0666@bayreuth.baynet.de
WWW: http://www.spektracom.de/flying-snail/

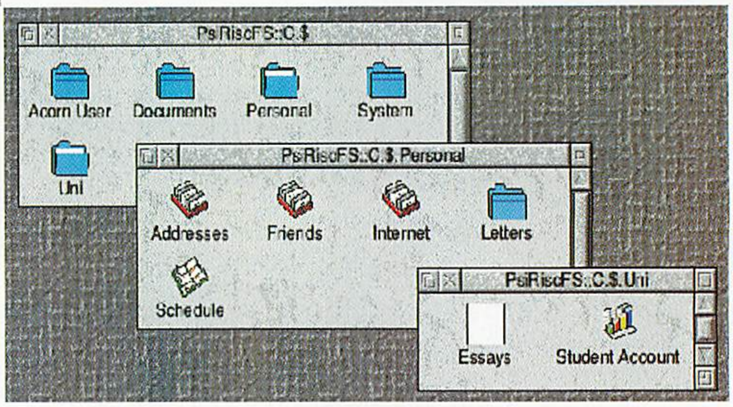



# Risc-y Psions



**Mark Taylor** takes a look at *PsiRisc* from IMS




The same directory in the first (LHS) and second (RHS) releases of PsiRisc show the improvements IMS have made

The enhanced Psion serial port, first seen on the 3c, may have been good news for most but for Acorn users it led to two years of being unable to connect these machines to the RISC OS desktop. This has now all changed with the release of *PsiRisc* from IMS.

The first release of *PsiRisc* has been available for some time and allows users to connect either the Psion S3, 3a, 3c or S5 and offers conversion facilities for S3 files. The second release, which I currently have in beta test form and will be free to registered users, should be available by the time you read this and will add S5 file conversions and support for long filenames.

## In use...

In order for *PsiRisc* to load correctly your Psion must be connected and turned on otherwise the program exits straight away. This is rather annoying and I would have much preferred the program to load up and indicate on the iconbar that nothing is connected.

Once successfully loaded, the *PsiRisc* icon appears on the left of the iconbar and clicking on it brings up the root directory of the connected Psion. The iconbar menu allows you to access any SSD or compact flash disc, either converted or unconverted. There is also a preference option for configuring the converters and a backup option.

The baud rate of the serial port, as with *PocketFS*, still has be set via the programs Run file which is a bit of a pain. It would be useful, in future versions, to be able to configure this via the application.

The backup option allows you to backup each of your Psion's drives. Backups are done by dragging a directory to the location you want to store the backup in, selecting start and waiting. A full backup takes quite a while but the program offers an update system which only copies new files into the backup archive.

Backups can only be restored in full and this is done by dragging the backup archive onto the *PsiRisc* icon, choosing the relevant drive and selecting start. The system works well as a cheap and reliable way of backing up your Psion.

## ...on a Series 3...

Clicking on the *PsiRisc* icon brings up a 'converted image' of the M drive in a standard RISC OS file window. Files can be renamed, deleted and new directories created.

Conversions are fairly standard: Word converts to Text; Data and Sheet to CSV. Files are copied to your Acorn drives in the normal drag 'n' drop manner. *PsiRisc* – unlike *PocketFS* – doesn't offer a simple list of files available for conversion.

Images of other drives are brought up through the iconbar menu and it is also possible to bring up an unconverted image. The unconverted images are useful for making partial backups and for copying applications onto the machine. File transfer speeds are very respectable and comparable to those achieved from *PocketFS*.

## ...and on a Series 5.

This time, clicking on the *PsiRisc* icon brings up your S5's internal drive. The first release of *PsiRisc* doesn't support long filenames, so they are truncated but fully preserved when copying files to/from the desktop.

The first release also displays all filenames in capitals, similar to the DOS environment. However, the second release is a vast improvement, fully supporting long and mixed case filenames. The picture shows the difference between the two versions. The second release also offers file conversion for Data, Word and Sheet files.

Application files can be copied onto the machine, but installation of .SIS files has to be done on the Psion as *PsiRisc* doesn't yet offer conversion facilities.

The speed of file transfers to/from the S5 seems a little slow in the first release but, again, is vastly improved in the second. A very minor niggle is that although the program multitasks on the majority of file transfers, on larger files *PsiRisc* tends to take over.

## Overall

*PsiRisc* is a very good package which finally allows Acorn users to connect to the entire Psion range. The second release is a vast improvement over the first and is most impressive.

Although, it's never likely to offer all the features of *PsiWin*, it does offer all the necessary facilities and apart from synchronisation, it can do everything that *PsiWin* can do although in some case a little more effort is required.

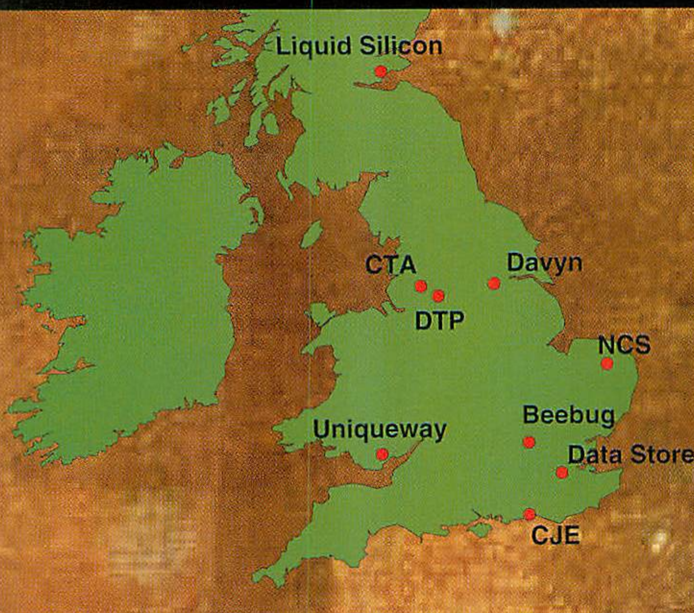
Highly recommended for all Psion/Pocket Book users. AU

### Product Information

| | |
|---|---|
| Product : | PsiRisc |
| Price : | £44.95 |
| Supplier : | Innovative Media Solutions |
| Address : | Box Bush Farm, West Wick, Western-S-Mare, BS24 7TF |
| Telephone : | 01934-522880 |
| e-mail : | sales@ims-bristol.co.uk |
| WWW : | http://www.ims-cdc.demon.co.uk/ |

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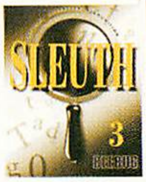

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## Key :

**NRPC** Not for RPC
**NK** Needs Key+
**IK** Includes Key+
**PB** Picture Base
**WS's** Worksheets
† Separate RPC version available

*Please note many titles have been abbreviated for the advert*

Revision 4g

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# A brief history of

**Nobilangelo Ceramalus** traces the development of the RISC concept

The development of computer hardware is usually divided into three generations: Valves, transistors and integrated circuits (chips). A simpler and more meaningful division gives two: Pre-RISC and RISC (Reduced Instruction Set Computer). Pre-RISC culminated in CISC technology (Complex Instruction Set Computer), in which unscientific architecture reached its ultimate expression.

Intel's 32-bit iAPX-432 chipset, which was launched in 1981 and billed as the company's future, represents the height of CISC lunacy. It soon expired under the weight of its complexity, proving that the CISC road was a cul-de-sac. RISC principles were first used by Seymour Cray in the mid sixties in the CDC 6600 and continued by him in his own super computers, but the rest of the world did not follow until IBM's ill-fated 801 Project began in 1975.

## The early days

Electronic computers were born in the 1940s as pure hardware, in which programming was largely a matter of altering circuits. The 1946 ENIAC in the US and the slightly earlier Colossus in the UK, for example, both had hardware patch-panels. The first stored-program computer, in which the program was loaded into memory along with the data, was the Manchester Mark I, built at Manchester University in 1948. Commercial machines appeared soon after.

Although the stored-program computer made it possible for programmers to write programs in machine-code, or its symbolic equivalent, Assembler, the instructions in the hardware were still of paramount importance, because applications software was written for them directly. But programming in Assembler is laborious and time-consuming. It is like directing someone by telling him which muscles to move. In an effort to make programming less difficult, hardware designers built in more and more complex instructions, so that programmers at least had access to the equivalent of *raise your right foot* and *bend your knee*.

And software designers built high-level languages, such as Fortran, Cobol, PL/1, Algol and so on, which gave the equivalent of *take one pace forward* and *turn left*. Programs written in high-level languages were translated into machine code – either before being run by a compiler or at run-time by an interpreter.

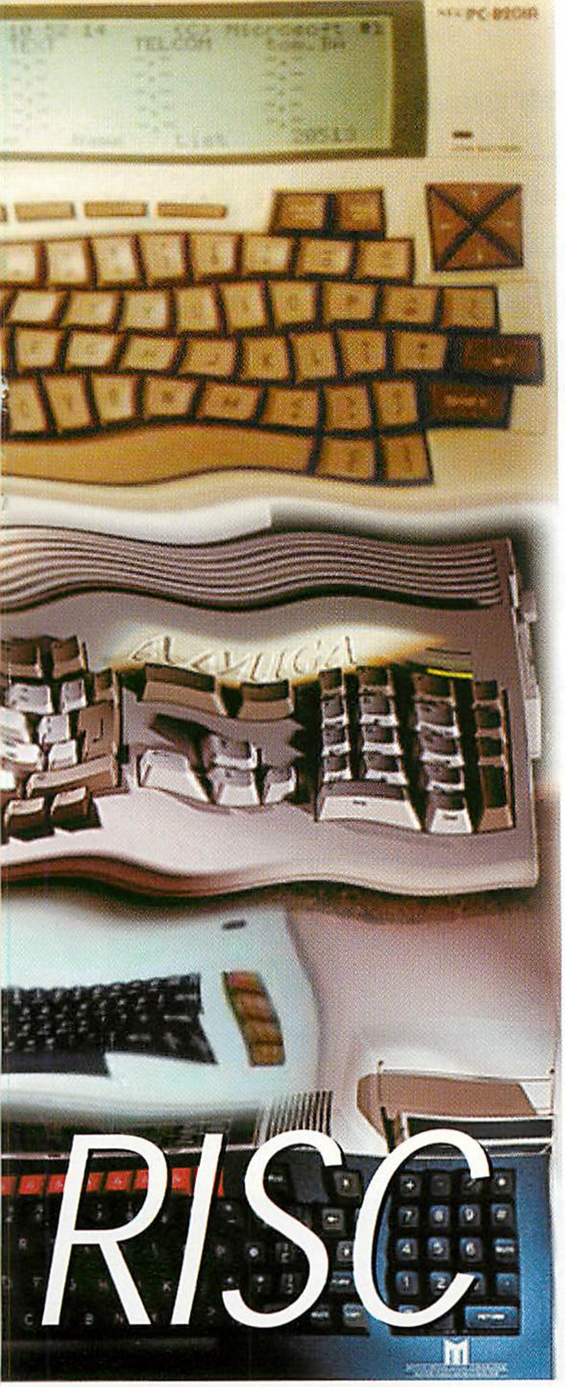
But hardware designers kept designing machines for Assembler, partly because a lot of programming was still being done in it and partly, it seems, because they did not understand the significance of the rise of the compiler. In CISC's heyday in the 1970s it was thought that the more instructions you could pack into a machine the better. Compilers, it was argued, would be simpler; machine languages would be closer to programming languages, so the software crisis would be alleviated; and the architecture of the computer would make programs shorter, so they would run faster.

## Microcode

The instructions being built into machines became so large and complex that they could not be put into the CPUs. Instead, CPUs actually had an reduced instruction set called Microcode and the full instructions were interpreted. The software accessed the CPU instructions, which in turn caused the appropriate chunk of microcode to be fetched and interpreted. Intel's 80x86 and Motorolas' 680x0 chips have that arrangement. But using microcode creates a huge overhead that consumes many clock-cycles. That disastrous 32-bit Intel iAPX-432, which was spread across 12 chips, had the most complex instruction-set in computing history, with 222 instructions that varied in length between 17 and 300 bytes. Some took tens of milliseconds to execute and the whole thing ran slower than older 8-bit systems.

Worse, programmers and compilers were making little or no use of a large number of the instructions provided for their benefit. As shall be seen that colossal waste was first identified by IBM in 1974 and led to the discovery of RISC principles; but from then on, and particularly after 1977, the history of RISC stopped being an orderly, user-friendly progression of radical technology into advanced products. Instead it became a scandalous example of how the meddling of marketing bosses can distort a whole industry, setting it back decades.

Their abuse of power deprived the world of RISC in the late 1970s, and substituted late 1960s CISC technology, giving it an artificial dominance far beyond its proper term. John Greenleaf Whittier's famous




lines: 'For all sad words of tongue or pen, The saddest are these: "It might have been!" ', apply perfectly to the history of RISC.

It is like the story of Snow White – born so beautiful that she outshone the wicked queen, who arranged to have her killed by a hunter. But he spared her and she was found and nurtured by a group of dwarves. The queen tried to kill her again, but only succeeded in putting her to sleep. She was awakened at last by a handsome prince and became the new queen.

In 1974 IBM decided to get into the business of making computerised telephone exchanges. So at the company's Thomas J. Watson Research Centre, Yorktown Heights NY, a team that included an IBM Fellow, Dr John Cocke, embarked on a project to design a large telephone-switching network capable of handling 300 calls/sec. For that it needed a 12MIPs machine, which was then a big number.

When that project was terminated in 1975, the Telephone Machine had not been built, but the design had progressed to the point where it seemed an excellent basis for a general-purpose, high-performance miniprocessor that could be made at relatively low cost. The team's key realisations, after actually *measuring* – for the first time – the live performance of System/360s, were that imposing microcode between a computer and the real code imposed an expensive overhead (because only 25 per cent of the instructions were being used 80-90 per cent of the time), and that simple instructions executable in one cycle would run substantially faster for the same circuit-family and cycle-time once the overhead of the CISC interpreter had been chopped out.

## The basic RISC principle

That led to the realisation of the basic RISC principle: A faster machine could be built in VLSI (Very Large Scale Integration) at low cost by reducing the number of instructions; any complex instructions needed could be built in software (via the compiler) out of several simple ones. Unfortunately, the Telephone Machine that Cocke was aiming for was only a name, not an insight, otherwise the fundamental importance to computing of communications and telecommunications might have been recognised back then.

But, as Cocke tells it, 'that name no longer seemed appropriate' for the team's new project, so what was to be IBM's first RISC machine was named 801 after the number on the building where the research was done – the acronyms RISC and CISC had yet to be invented. The 801 team, 30 engineers strong, was led by George Radin. Before their machine existed in hardware it was emulated in a System/370 Model 168. A compiler was built for it, a simplified subset of the PL.1 compiler, called PL.8.

By 1977 some 801 code was running faster under emulation on the 168 than native code in native mode. As Cocke later wrote: 'We discovered that our Model 168, running code generated by the PL.8 compiler, consistently ran at 4.5-6MIPs at a time when it was considered an accomplishment to drive a 168 at 2MIPs.

'Abstaining from the CISC-like operations of the System/370 and using it as a RISC machine gained substantial performance improvement. This demonstrated conclusively that an appropriate combination of RISC-based architecture and an optimising compiler could out-perform a CISC-based CPU for a comparable program-instruction stream without materially expanding the code.'

In short, they recognised the shift from the dominance of hardware to the dominance of software – that programming was now being done in high-level languages for compilers, not in Assembler for hardware. In a RISC system, the traditional boundaries between the hardware, the compiler and the operating system are modified to optimise overall performance. Responsibility for a given function shifts to the compiler system when the compiler can do it better.

When the 801 was built in 1978, using ECL technology, it was IBM's fastest experimental processor, but it was never put on the market. The technology only saw service in the I/O processor in the 3090s, the microprocessor in the 9370, and the ROMP platform for the RT (RISC Technology) workstation. Ahmed Chibib, one of the 801 team, who worked in Austin, Texas on compiler technology, angrily recalls that a RISC machine almost made it in the late 70s: 'We had a 3MIPs RISC PC on paper in 1978 and we could have launched it in 1979,' and he is still furious about the fact that it never happened.

## Project killed

Snow White was too good; the queen was thinking about the hunter. In 1980 IBM's hierarchy decided to kill the whole 801 Project. Snow White was now dead in her crystal coffin. But the project seeded the rest of the industry either directly, because disappointed and disgruntled people went off to other companies, or indirectly via rumour – nothing of the top-secret 801 research was published until 1982.

At about the same time as it killed the 801 Project IBM started thinking about making a PC – the XT – to counter Apple's runaway success with little boxes. But it ignored its own ROMP chip. First it built a 68000-based machine, but that was killed by the marketing men because it outperformed the System/23, the rough equivalent for those days of the AS/400. Instead they decided to base the XT (Extended Technology) on Intel's 8088, which was little different to the chip a Texan computer company called Datapoint had invented in 1967/8 and had asked Texas Instruments, and then Intel, to build. Texas Instruments made it, but then made a strategic decision not to continue with the building of microprocessors. So much for foresight.

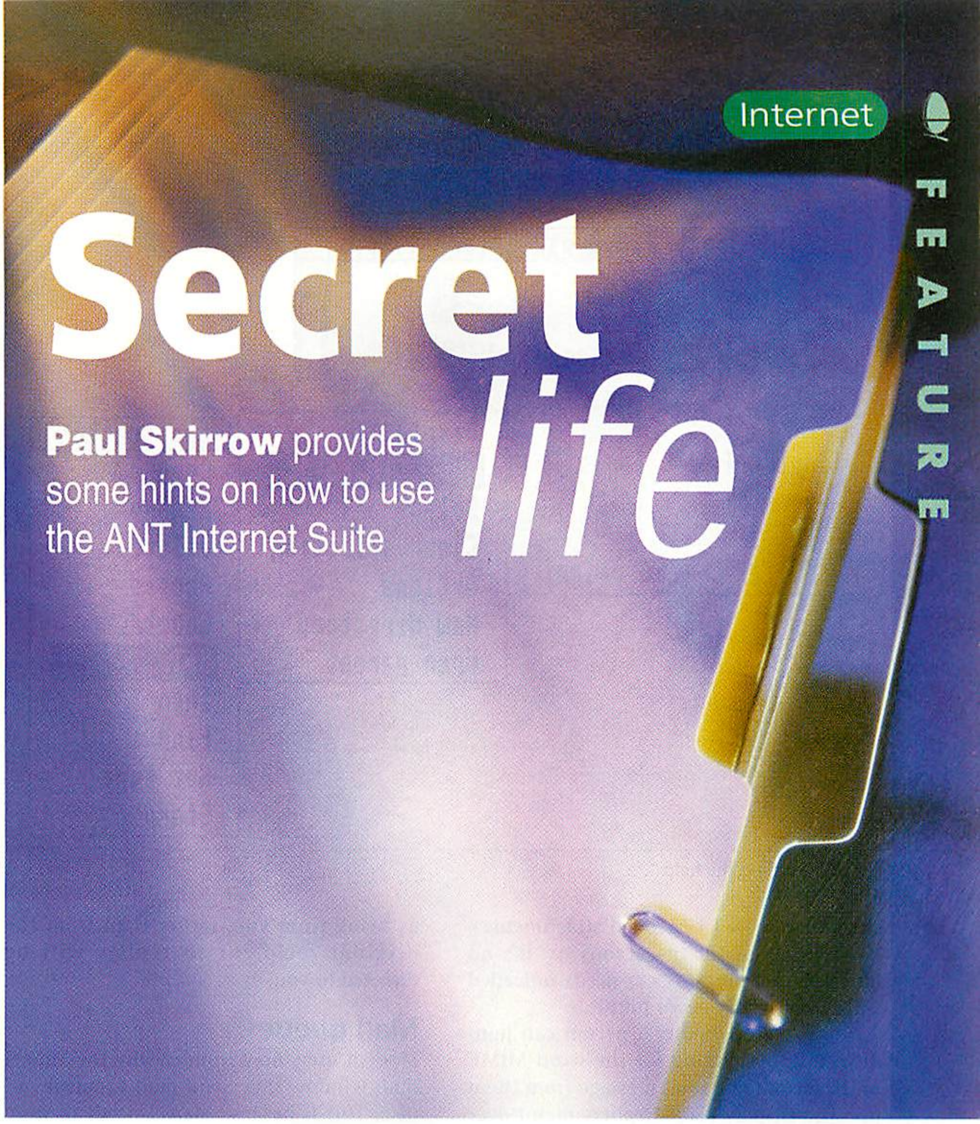
A year later Intel finally produced the chip that later became the 8088, the puny heart of the XT. 'The worst chip they could have chosen,' says David Jagger, one of Australasia's foremost experts on RISC and its history, having gained a first-class honours degree at Canterbury University for the thesis he did on RISC for his M.Sc.(Comp.Sci.). He later became one of the very early employees at ARM. The unfortunate consequence of that choice was the world's Great Leap Backward into the Intel-based PC and MS-DOS/Windows, from which it may still take decades to emerge. AU

## Next month

**Nobilangelo Ceramalus continues to trace the development of RISC through the 80s and the ARM chip up to the present day.**

# Secret life

**Paul Skirrow** provides some hints on how to use the ANT Internet Suite



The *ANT Internet Suite* is the most popular Internet software for Acorn users. It is reasonably fast, powerful and easy to use, but the complex manual and the enormity of the Internet can make it daunting for many users. This article, together with the second part next month, features a collection of hints and tips that will help you get more from the ANT Internet suite and turn it into a powerful tool.

*The ANT Internet Suite* comprises several different components: The *InetSuite* dialler (which controls the modem), the Internet stack (which handles all of the Internet communication), the *!Fresco* Web browser and the *!Marcel* mail and news reader as well as several utilities. You needn't restrict yourself to these programs though – it is quite easy to use *!Browse*, the new Acorn Web Browser, alongside *!Fresco* and many users prefer Jonathan Duddington's *!Pluto* or the PD *!Newsbase/!Messenger* software to *!Marcel*. They don't need any complex setting up and you can still use the InetSuite dialler and the same Internet stack.

## Free upgrades

ANT regularly produce upgrades to the *Internet Suite* and they are available as a free download from the ANT Internet site (the latest versions are *InetSuite* 1.29b and *Fresco* 1.72). Click on the *Fresco* icon opens the main window and then click on Latest releases to access the ANT upgrades page. The upgrade is easily installed with the *!Upgrade* program (in the Internet Tools window) and you can even save the hassle of entering your rather unwieldy serial number every time by typing it into a file using Edit and then simply dragging that file to the serial number box as shown in Figure I.

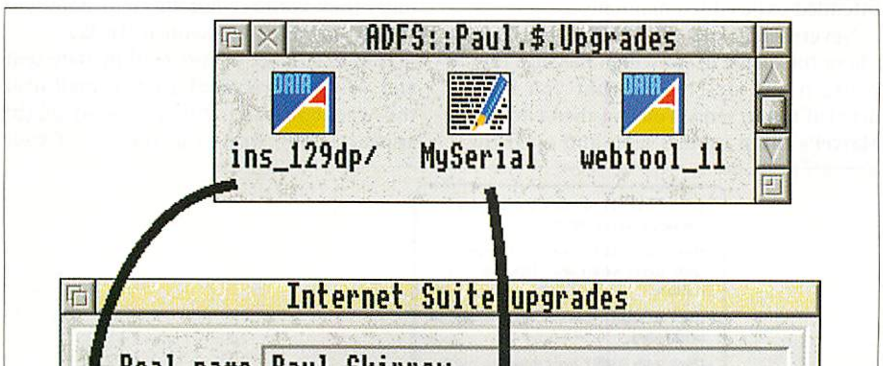



Figure I: Installing an upgrade using a serial number file

## How to find help

ANT have created some useful help files which describe the new features in the latest versions, but they are hidden away and difficult to find. In *Fresco* you can see the help by simply clicking on a *Fresco* window and pressing F1, but for the other applications you need to find the applications themselves in the Apps directory within your Internet directory. When you find them you need to press Menu over an application and use the App->Help menu as shown in Figure II.

The *ANT Suite* also has a lot of useful interactive help and even experienced users can benefit from running *!Help* and pointing at some of the buttons to find the latest hidden features. Figure III shows interactive help with Acorn's *!Help* program and also with Miles Sabin's excellent *BubbleHelp* program which is much prettier – available from David Pilling for £5. Many of the buttons have extra functions when used with Shift or Adjust and the *ANT Suite* has far more keyboard shortcuts than most programs.

There are also a lot of useful hints on the Internet itself. In particular, ANT have a list of Frequently Asked Questions (and answers) on their website and I have put some help for new Internet users on http://www.octosys.co.uk/newnt.html

## Marcel can MIME

If you've ever wondered why an e-mail program should be called *Marcel*, it's because it can MIME. MIME is a way of sending files with mail messages and it can be used to send whole directories as well as individual files. However, some mail systems can't receive MIME attachments and ➤

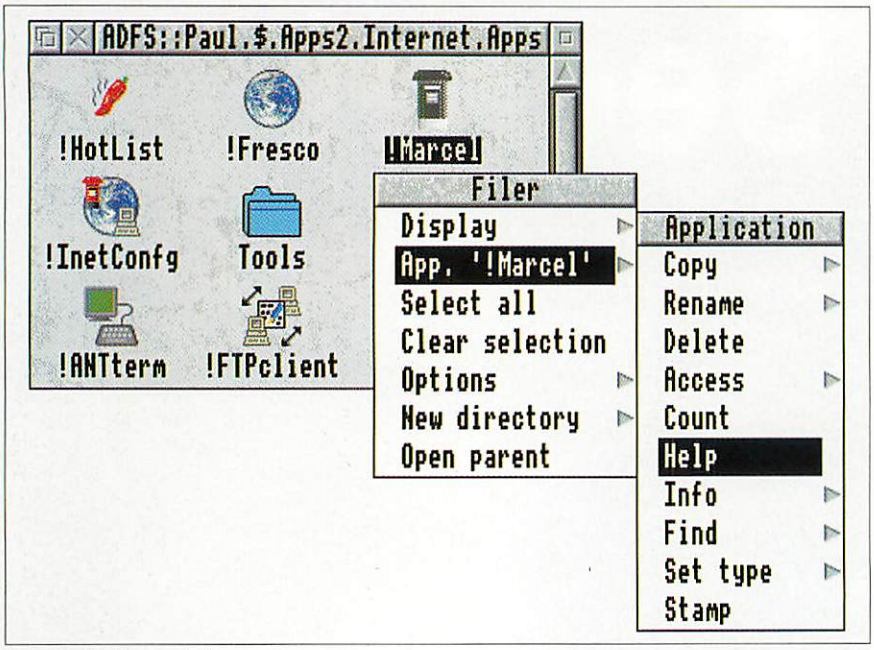



Figure II: Finding the help

can only handle UUencoded attachments – don't worry about the acronyms, it's no different to saying my car needs unleaded while another car needs four star.

You can see whether a person can handle MIME by looking for the word MIME in the header of a mail message from them (use the Display->Full Headers menu over a message to see the headers). If they can't you should always send files to them using UUencode and you can set this in the Send Mail window.

## Bounce, Forward, CC and BCC

A lot of e-mail terminology can be confusing especially as there are some subtle meanings associated with many everyday words. When you send an e-mail the send-mail window has a CC and a BCC field for sending copies to other recipients. CC stands for Carbon Copy which means that a copy of the message will be sent to the address or addresses in the CC field. BCC or Blind Carbon Copy means send a copy to another recipient secretly without the main recipient seeing that a copy has been sent.

Bounce on the Message menu is used to bounce a copy of a particular message to another recipient and this may be used on a message that you have received to send an identical copy to somebody else. It can also be used on a message already sent (in your Sent mailbox) to send it to another recipient or to re-send it the original recipient if they have lost the original. When mail is bounced the 'from' and 'date' fields are unchanged so if the person receiving it clicks on reply they will be replying to the original sender rather than the person who bounced the mail.

Forward is similar to bounce but it allows you to edit the message before sending it on to another person. Furthermore the message will be marked as being from you, rather than from the original recipient so replies will be directed to you.

## Mail queue

Modem users may wonder why the Marcel mail window says 'send mail to queue' on disc. This is because Marcel needs to store the mail somewhere until the modem is used to connect to the Internet and it puts all of the outgoing mail in the !InetSuite.Internet.Spool.Queue directory (hold Shift and double-click on *!InetSuite* to open it). Each mail message is stored in a separate file, but they are not really intended to be edited manually.

Nevertheless you can still look in each file in the queue to see which message they contain and delete one that you have decided not to send. You can then click on Marcel's filing cabinet icon and open the Sent folder to retrieve a copy of the message that you sent. The Forward option can be used to send it to a different destination or to modify it before sending it to the original destination.

It is important to realise that the Sent folder only contains a copy of what you have already sent to the queue. It cannot be changed in any way and if you want to send a modified version you must delete the file from the queue before it is transferred to the Internet and then re-send the mail after making suitable modifications.

You can even put the queue directory on your pinboard by dragging it there and saving the pinboard. This means that it is easily accessible if you ever want to see which messages are waiting to be sent.

## Sorting the mail

Marcel has a useful sort function on the display menu which can display the contents of a mail folder sorted by date, subject or sender. The latter can be quite useful as it enables you to group together all of the mail from a particular person so that you can step through all of their messages easily – the alternative is to click on the Search button but this usually results in lots of scrolling through the mail folder looking for highlighted messages.

The 'sort by date' menu has two options: 'Sort by date sent' and 'sort by date received' which superficially appear to be almost the same – after all, mail is usually received very soon after it is sent. The reality is more subtle. Imagine somebody writing mail on Friday but not connecting to the Internet until Monday. The mail will be held in their disc queue until they connect but the sent date will still be the date they wrote it (Friday).

If Marcel is set to sort mail by date sent and you have received a lot of mail over the weekend then this new mail might appear a long way from the top of your

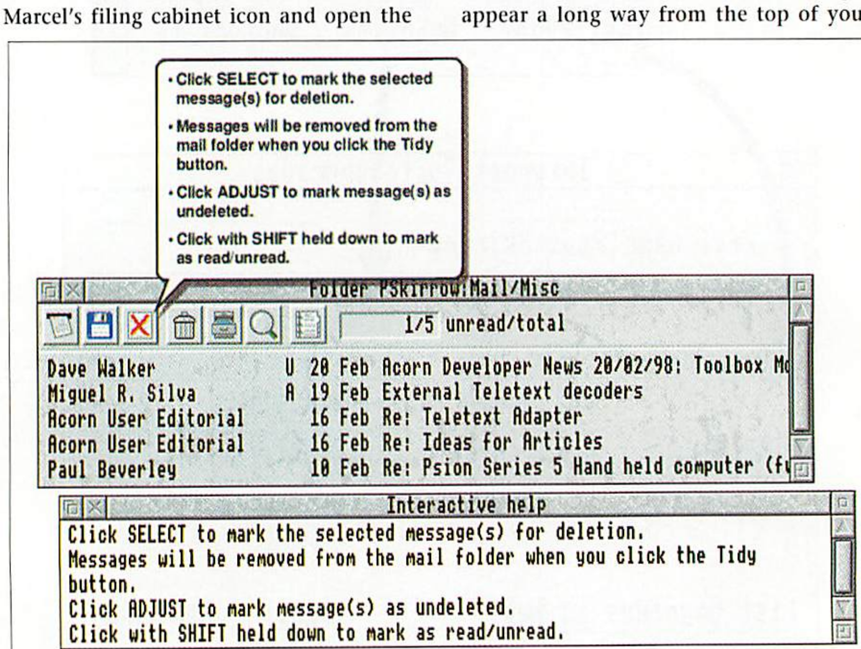



Figure III: Interactive help from Marcel

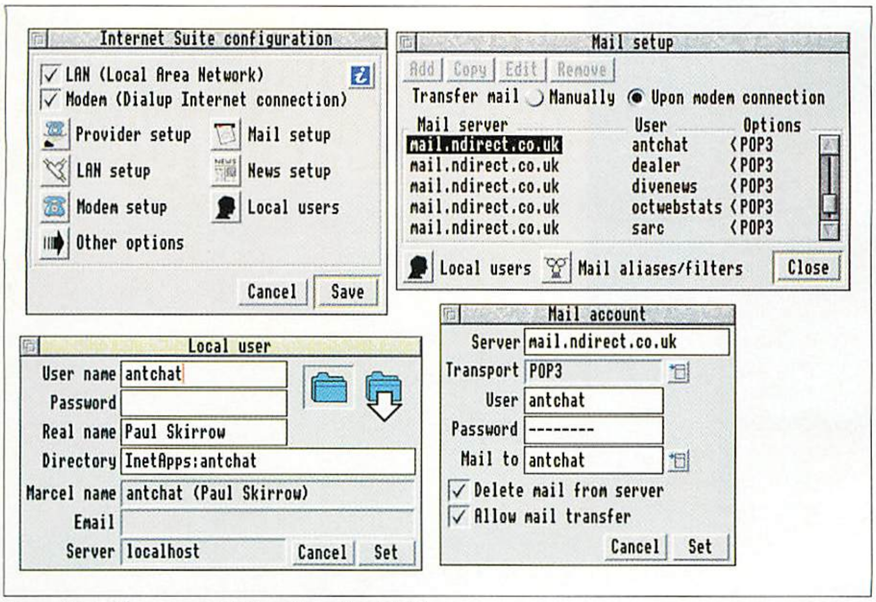



Figure IV: Adding a new POP3 mailbox for ANT Chat

mail folder. In fact if you have received more than 30 messages it might not even appear in the window unless you scroll down looking for unread messages.

A similar situation arises if somebody bounces a mail message to you – its date will be the date the original author wrote the message, not the date it was re-sent.

Sometimes though the 'sort by date sent' option is useful. Where several contributors are joining in a discussion (perhaps on a mailing list) it is much more useful to use this option to ensure that the articles are read in the order in which they were written. There is no guarantee that the mail server at your Internet Service Provider will send mail to you in the same order in which it received it so if you only collect your mail infrequently you might find a dozen messages on the same subject shown in a random order when using the 'sort by date received option'.

## Multiple mailboxes

Mailing lists are often used on the Internet as a form of mini-newsgroup, and ANT have several mailing lists for InetSuite users. To subscribe to the ANT Chat list you need to send an e-mail message to inetchat-request@ant.co.uk with the single word 'subscribe' in the message. To cancel the subscription, send the word 'unsubscribe'.

The ANT chat list is a great place to ask for help and advice but it usually has around 15 messages per day which can easily swamp your own personal mail. The solution is to use a separate mailbox for the mailing list and many Internet Service Providers will include five free POP3 mailboxes with each account.

You need to tell your service provider the name (perhaps antchat) and password you wish to use and then use the Mail setup configuration to Add a new POP3 fetch which sends the mail to a local user with the same name, see Figure IV. You also need to use the Local users configuration to create the user and once you have saved all the changes to the configuration you can log in as the antchat user with *Marcel* and send a subscribe message from there. The antchat mail will then be sent to that mailbox and kept separate from your own personal mail.

Multiple mailboxes are useful for several users sharing the same computer and want to keep the mail separate as well as for keeping your mail divided into different areas. I use several e-mail addresses: One for personal mail, one for business mail, one for the ANT chat mailing list and so on.

Even if you are using a miserly Service Provider who only gives you one POP3 mailbox, you can still use separate mailboxes and set up a mail filter to route mail from a particular address (such as inetchat@ant.co.uk) into a particular mailbox on your computer. Click menu over *!InetSuite* on disc and use the Apps->Help menu for more details.

## Java and Browse

Acorn's Java is now available on CD and once installed it will load automatically when Fresco encounters a Web page containing a Java applet. The applet runs within a frame on the page and this might be to produce a simple animation or scrolling text or for something more useful such as an interactive program or even a game.

Sometimes it can be a nuisance having Java load and run applets, especially when they are used for trivial things such as scrolling text. Java can be enabled and disabled using two obey files *JavaOn* and *JavaOff* (see the box). Just double-click the appropriate file to turn Java on or off.

Acorn's *!Browse* is now available from Acorn for £39.99. Most people prefer *Fresco* to *Browse* as it is faster and has more features although *Browse* is rapidly catching up. *Browse* is sometimes better at displaying Web pages than *Fresco* and it can be useful having them both loaded simultaneously. *Browse* will work quite happily with the *ANT Internet Suite* but you must turn off the option to 'Use local proxy (e.g. Webserve)' unless you are actually using *Webserve*.

*Webserve* is a simple Web server and proxy supplied on the *Browse* disc. It can be used as a full Internet Web server if your machine is permanently connected to the Internet, or it can be used as an internal Web server within a business or school to serve Web pages across an Ethernet network. It can also be used as a 'proxy server' so whenever a browser requests a Web page it requests it from *Webserve* which then fetches the page from the Internet, or delivers it from its own cache if it has already fetched it recently.

I use *Webserve* with the *ANT Internet Suite* and set *Fresco* and *Browse* so that they both fetch pages through it. This means that once one browser has fetched a page it will be immediately available to the other and I can simply drag the URL from *Fresco* to *Browse* to see how the page will look there. To do this you need to ensure that *Webserve* is running (it can be loaded in *!Boot*) and set the option to 'assume connection is already open'. You also need to set *Browse* to 'Use a local proxy (e.g. Webserve)' under Other in Choices, and set *Fresco* to use a HTTP proxy on 'localhost:80', see Proxies in Choices.

If you have an Ethernet network, *Webserve* is even more useful, as it enables any computer on the network to access the Web via a single modem connected to a computer running *Webserve*. When a computer fetches a page it requests it across the Ethernet network from *Webserve* which in turns fetches it from the Internet unless it already has its own recent copy.

I use this to enable any computer on my network to access the Web via a single modem and I can even run Netscape or Microsoft Explorer on a PC card on another Risc PC to access the Web through the Risc PC that has the modem.

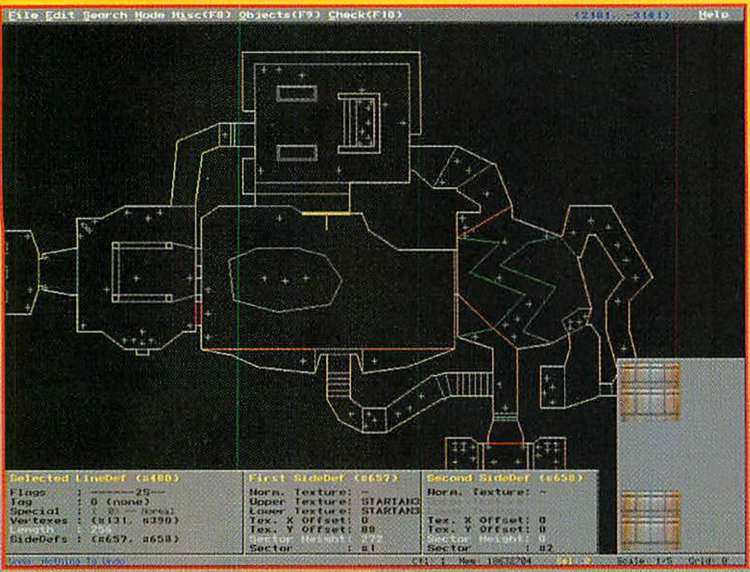
*Next month we will look at Fresco and ways to make Web browsing faster and more effective by removing adverts and speeding up Web searches.* AU

### Files to Fetch

Several useful files are mentioned here and you can find them on the cover disc or download them from:
http://www.octosys.co.uk/download/inet.bin
The files are:

| | |
|---|---|
| JavaOff | Disable Java so it won't be automatically run |
| JavaOn | Re-enable Java |
| QuickVista | A default page set up for Internet searching |

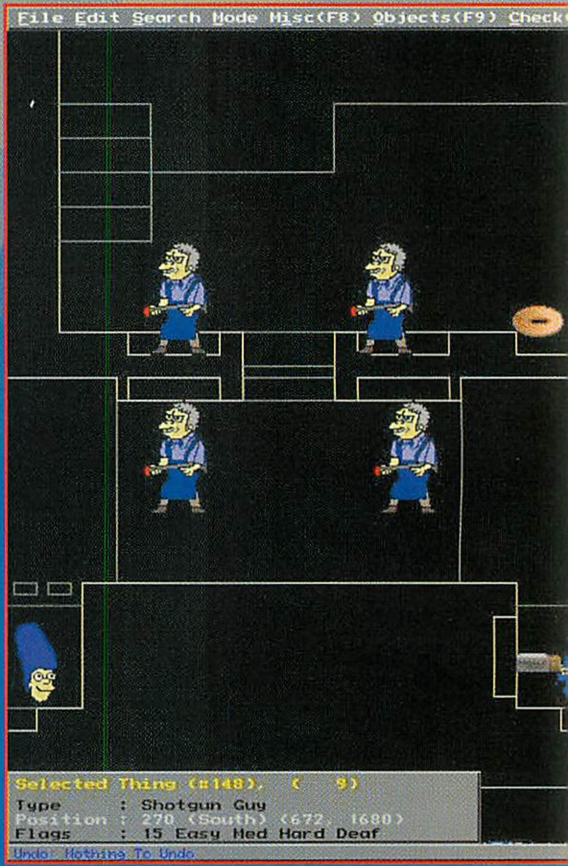
Doom it yourself




# GAME

# Doom at h

Graham Nelson m




The engaging *Anagram Genius* turns my full name into 'manages Acorn Hell' which, at any rate, is where I've been to write this month's column. I have been trying to get Andreas Dehmel's admirable *Doom It Yourself* to work. Briefly, the author of *Doom*, John Carmack, released a Linux version of its source code free as a Christmas present to the world's hackers in 1997. 'Some project ideas,' he wrote: 'Port it to your favourite operating system.'

For ethical reasons that I do understand, or legal ones that I don't, no Acorn version can be downloaded. (Andreas Dehmel, the porter, declares that he doesn't want to undermine RCI's commercial *Doom* release.) Instead, you can download patches and odds and ends to compile the Linux source yourself. You still need the *Doom* WAD, a compendium of graphics, sound and data needed by the engine, which means either buying and somehow decoding it; or downloading, and somehow decoding, the (still quite good) shareware version. You also need a high-end Acorn (an A5000 at the very least), about 25 megabytes of spare disc space and Internet access.

Andreas Dehmel's page (http://www.forwiss.tu-muenchen.de/~dehmel/DIY.html) supplies an archive with instructions (of a sort) and a big shopping list. I already had the Acorn C compiler, linker and 'make' utility, but these are unsuitable. So next off to Hensa (http://micros.hensa.ac.uk), which is in disarray thanks to a somewhat unnecessary rearrangement only half-carried through. Numerous Web links to Hensa are broken as a result.

Still, I eventually found *drlink*, a free Acorn linker by David Daniels, and *gcc*, the freeware Gnu C compiler. (In fact, *gcc* is a support program while *cc1* is the compiler.) *gcc*'s instructions are incorrect and as supplied it crashes with a 'No writable memory' error. Nick Burrett, *gcc*'s porter, kindly e-mailed me to suggest running it in a task-window with a wimp-slot of at least 3M: and at last I was able to compile and run 'hello world'. Mr Burrett's home page, at http://guest.btinternet.com/~nick.burrett/ (the link from Andreas Dehmel's page is incorrect), offers a set of stubs to use *gcc* with the RISC OS shared C library: a mercy, as the alternative is using the large and unreliable 'Unixlib'.

Next to the Stuttgart ftp archive for Acorn versions of *patch* and *make*. Stuttgart's service was slow and wobbly, so I ended up using the mirror at src.doc.ic.ac.uk. Finally, to id Software, the makers of *Doom*, to download doomsrc/zip, the Linux source.

The *Doom It Yourself* instructions, never very forgiving of ignorance, claim wrongly that the Linux source is a tar archive. Actually, it's a Zip archive containing a gzip of a tar archive of 137 files named PC-style. Every version I could find of *gzip* dated from 1993 or so and crashed my Risc PC. *SparkPlug* won't open gzips, so I had to use *SparkFS*.

The trick is: decompress the gzip within its original archive (*don't* copy it elsewhere), producing a plain tar archive. *SparkFS* won't open this tar: It gives a 'duplicate char' error. So drag it from the *SparkFS* directory to *SparkPlug* on the iconbar.

## Doom It Yourself

**Patches Id's *LinuxDoom 1.10* sources for compilation on *RISC OS* using *GCC 2.7.2*; you can link against the *SharedCLib* or *UnixLib*.**

**Last update: 12 Jun 98.** See News.

Don't expect a fancy web-page, I have more important things to do, so here's just the bare bones.

When you download **Doom It Yourself** you get an archive containing patches (created with `diff`) and some sources I wrote entirely myself as well as a script to auto-install the patched Doom sources on your harddisc. All that's required on your end is reading the documentation carefully and typing `!Patch` from the CLI (and later on compiling the whole thing by typing `make`).

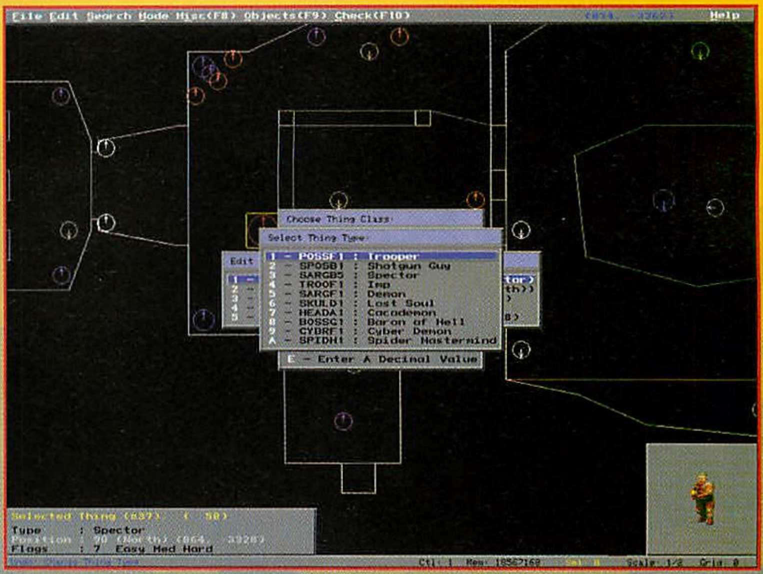
Let me clarify one thing, though: the object of **Doom It Yourself** is *NOT* to put anyone out of business or anything like that. It is purely to put RISC OS users into the same situation as Linux users. Therefore I want to ask everybody who's downloading **DIY** not to copy the executable to anyone or act in a similarily irresponsible manner. If you can't compile it yourself you're out of luck. **DIY** is only for your own, personal enjoyment, so I don't want binaries based on my sources appearing in public. And that's an order.

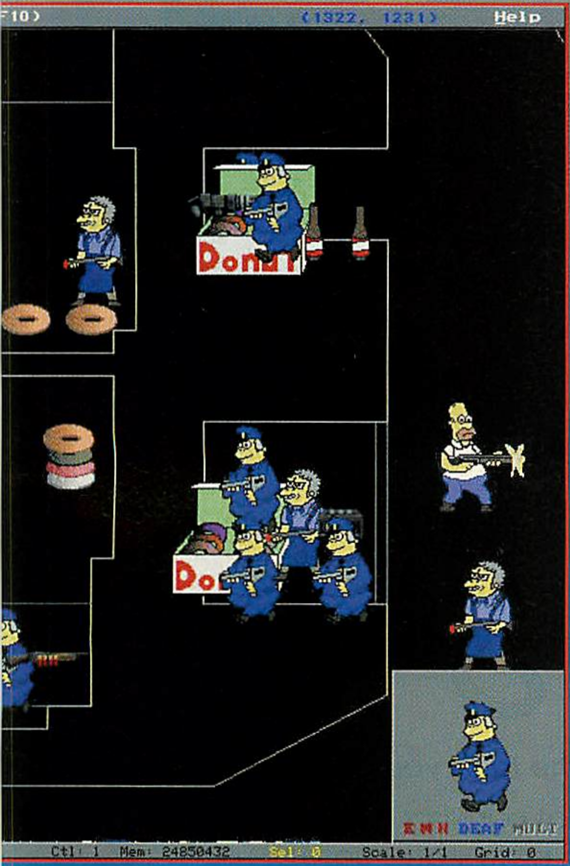
The filenames are now wrong, and you won't be able to use the *Doom It Yourself* automatic extraction code. Instead, copy all the C files into a 'c' directory and all the H's into an 'h' directory, and then rename them all. Now modify *DIY*'s code to skip 'stage 1', the extraction stage, which you've just done by hand.

To my great surprise, the worst was suddenly over. Andreas Dehmel's code took over and patched the C source, basically converting it to code compilable by *gcc* and gluing in Acorn tweaks here and there (including sound support, which was entirely missing in the Linux version). Setting up a task-window with a whopping amount of memory (12M or so) and running make, the whole lot compiled and linked in about 10 minutes without fuss.

# SHOW begins ome

anages as best he can




(If you get an unresolved name, you need to set Unix$Path to use Nick Burrett's C library stubs.) And there it was, a !RunImage.

The instructions now stop, which is unfortunate because I still had to work out where to put the *Doom* WAD in order for the engine to find it. I guessed at the 'WAD' subdirectory, but was wrong, and had to look up the source code to find out. The answer varies depending on which version of the main WAD you have, irritatingly. See 'd_main.c'.

At last, it worked. And worked well, too: movement was swift and responsive, the sound-effects clear, the game convincingly like the commercial version. It lacks some of the 'finish' of RCI's official port, and using patch WADs (that is, home-brew levels) is trickier. But it already has support for *DeHackEd*, of which more later, and all in all I was impressed: I had expected something much more basic.

## Deth

Not what awaits us all, but the *Doom Editor for Total Headcases* – really, *Doom* would be a splendid game, if only it weren't so uncouth. One of the many rival architecture-creation programs for *Doom*, *Deth* has been ported to RISC OS in a rudimentary but useful way by Lee Noar, better known for his slick (and free) port of the superior PC platforms and ladders game *Abuse*. See his home page at http://www.argonet.co.uk/users/leenoar/

After unpacking the archive, I was initially unable to make anything work. The feeling of wading through treacle was undeserved, though, as it was only a naming problem: PC names in the archive, like 'common.cfg', had been flattened to 'common_cfg' by *SparkPlug* when I extracted them; whereas they needed to be 'common/cfg'. A little renaming by hand and *Deth* worked admirably well.

*Deth* is not an editor that starts with a blank slate; entering its 'browse mode' plots schematics of dazzling, Star Trek-wall-panel-like complexity. These are the level designs of the standard *Doom* WAD (presuming that you have it, of course). Punching various keys colours up different features: The Vertices, the Things, the Sectors. It had better be said now that *Deth* doesn't come with much explanation of *Doom* construction, but there are plenty of other sources for this on the Web. It does come with a key-chart running to three pages when I printed it out: this is a very DOS-esque program.

On the other hand, once you get used to clumsy DOS versions of pop-up menus, the user interface is gorgeous. Everything can be dragged, until the walls are a weirdly deformed mess of angles and the Things are scattered all over the place. Anything selected has its graphical image popped up for inspection: floor textures, monster appearances, wall patterns, all of course exchangeable. At once I made just about the most pointless and easy edit it's possible to make, by replacing the pool of water in front of the player's normal start position with a pinewood floor.

That one worked: not everything I tried did. Any kind of mistake with sidedefs, the defined textures on the two sides of a linedef (i.e. a wall) will cause weirdly freakish displays in play. You can walk through some walls, others appear and vanish by magic and sometimes your hand trails away into a sort of infinite-regress swirl of pixels. I was never sure whether errors were mine or *Deth*'s, though, let's face it, one of us is a lot newer to all this. I suspect that this port, with that least comforting of all version numbers, 0.01, is as yet rough and ready. But even if you don't build a masterpiece with it, *Deth* is worth a look just to see how *Doom*'s internals work; it's like easing the back off an antique watch.

## DeHackEd

My main problem with *DeHackEd* is how to pronounce it – like 'stacked', or 'head'? Surely not in three words? Never mind. *DeHackEd* is a system for hacking, that is, modifying the *Doom* engine program. Some of the more stylish *Doom* level designs need to alter *Doom*'s behaviour in ways which 'patch WADs' of new data are too basic to express.

WADs are fine for wall designs and layouts but will never allow you, for instance, to make lamps explosive or to change the characteristics of the monsters and weapons. *DeHackEd* is both the name of the editor and of the language which the changes are written down in. For instance: 'Thing 12 (Imp) / Hit points = 4' or, less legibly, 'Frame 207 / Sprite number = 57'. As this demonstrates, *DeHackEd* is really for altering lookup tables hidden inside the engine program; it's nothing like as sophisticated a tool as *QuakeC*, an honest-to-goodness programming language for *Quake* extensions.

As mentioned above, Andreas Dehmel's *DIY* now supports *DeHackEd*, and there's a version archived at RCI's site for commercial *Doom* too. Both seem fine for the experiments I tried; I can't really imagine wanting to write my own *DeHackEd* patches, but it's good to have the utility all the same, if only to run the more extravagant 'total conversions' of *Doom*. Bugs Bunny World, anyone?



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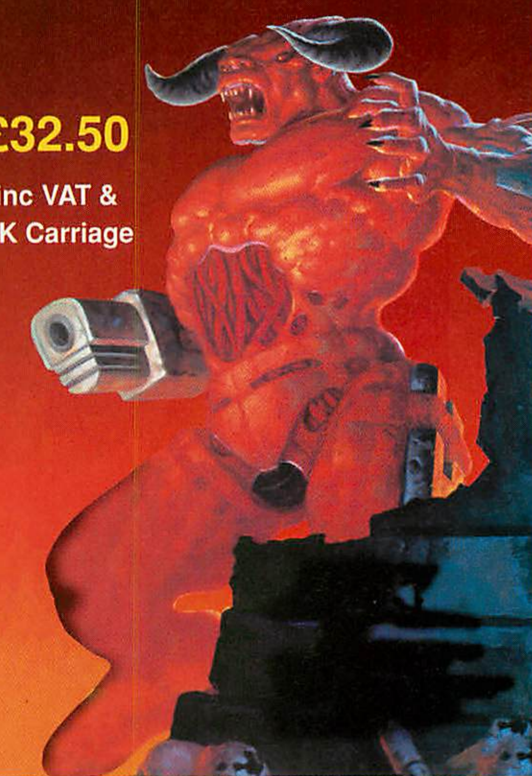
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# Ankh

**Steve Mumford** discovers graphical tales of mystery from Artex

Meet Domi El Rhahdjiif, a young Egyptian lad – he's stuck at home getting under his parents' feet and it's time to start making a niche for himself in the wide world outside. What better way to begin adulthood than by requesting an audience with the Pharaoh to offer him his services? And so the story opens. It's set in Cairo at a nominal date of 500BC and you can sit back and watch Domi discussing life with his father before being given the reins.

The second big release from Artex, *Ankh* is a CD-based graphical adventure game of the point-and-click variety; the command interface is very similar in function to the other *Simon the Sorcerer*-style games of this world, and so is easy to get to grips with. I was initially rather surprised that Artex were going for a CD-based release – there's a lot of space to fill – but it gives them an opportunity to show the games-playing public just what they're capable of. Perhaps just as importantly, releasing *Ankh* on CD will have given them valuable experience that they can put towards the construction of *Tek*, the next big game on Artex's horizon.







Puzzles unfold as soon as Domi leaves his father's house; there just happens to be a gaggle of so-called Libyan terrorists standing outside who aren't particularly good at their job; however, they do manage to steal your one silver coin, and one of the first challenges you face is plotting how you're going to get your money back. If Domi talks to each character for long enough, they generally let some important bit of information slip; in this case, one of the terrorists reveals that they're actually quite hungry and could do with a bite to eat. Of course, Domi can't satisfy their request immediately, and has to investigate the city of Cairo to find some food.







The *Ankh* world is inhabited by all manner of odd people; a slave who just happens to be a time-traveller from the future, a wine-merchant who insists on performing all of his conversations using his cat as an interpreter, a short-sighted dressmaker and an aqueduct engineer down a hole, all make an appearance in the beginning stages of the game.

Conversations take place using the standard multi-choice method and, as in *Simon the Sorcerer*, these normally consist of snide exclamations or witty asides. Sadly, the dialogue isn't of award-winning quality but if you're prepared to suspend disbelief for a little while, *Ankh* will do its best to draw you in.

Installation is pretty straightforward and is performed by running a simple application directly from the CD, although you'll need a considerable amount of disc space – around 20Mb for the low-resolution version of the game, and in excess of 50Mb if you want to go for the highest quality graphics.

I was supplied with floppy disc-based patches for the game which came in very handy and once those were installed, I had no major problems loading or running *Ankh*. For some reason the Replay movies don't work successfully on my machine; however, other than producing some awkward pauses at the beginning of the game, it didn't otherwise spoil my enjoyment.

As mentioned above, two different versions of the game are supplied on CD, differing in their resolution. Although the standard graphics are pretty enough to look at, the high-resolution version is really where *Ankh* comes into its own. The graphics are a blend of raytraced scenery and vector-based cartoon-style art, depicting the characters of the game. Although the graduated fills and blends bear all the hallmarks of certain graphics packages I could mention, the characters fit in remarkably well with the background, bringing the scenes to life. One area that could do with more work is the animation of the actors which is rather too jumpy in places.

Sound effects are used at various intervals throughout the game, both to add atmosphere and for punctuating the action on-screen. The quality isn't outstanding and the sounds appear a little forced in places, but all in all they do bring something to the game.

Music is also included on the CD, although if your computer isn't equipped with a mixer cable you'll have to re-route it through headphones or a separate amplifier. However, it's definitely worth listening to; there are seven ambient audio tracks on the CD and they're all of a high standard, providing the ideal accompaniment to your travels.

*Ankh* is a brave release by Artex and on the whole, the game is a success. On the negative side, some of the puzzles are rather superficial in nature and dialogue can be rather stunted, but the storyline is absorbing, the background tracks sound truly professional and the presentation is of a high quality.

## Product details

| | |
|---|---|
| Product: | Ankh |
| Developer: | Artex Software |
| WWW: | http://www.artex.oaktree.co.uk/ |
| UK Distributor: | RComp Interactive |
| Price: | £25 inc VAT & UK P&P |
| Tel: | 01925-755043 |
| Online order: | www.arsvcs.demon.co.uk/leisure/index.html |

# Acorn User Awards 1998




Have your say and you could be the lucky winner of a fantastic Olivetti printer

**WIN an Olivetti printer**

It's that time again, when we want you to look back over the year and decide which products and services deserve your vote in the *Acorn User* awards.

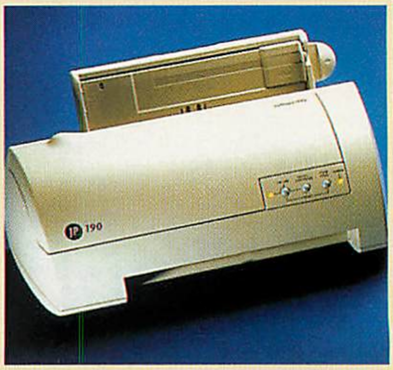
This year we've decided to hand the decision making completely over to our readers, after all you are the people buying and using the products every day.

So look at the categories below and decide who or what you think has shone above the rest over the last year – you don't have to fill in every category if you don't want to.

Plus, every form we receive with the correct answer to the competition question will automatically be placed in a draw to win a JP-190 printer (reviewed last issue) courtesy of Olivetti.

We'll be presenting the awards at Acorn World 1998 and featuring the results in the December 1998 issue of *Acorn User*.

Please send your form in by 1 October 1998.




## JP-190 tech spec

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Best game since Nov 1997: ....................

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Best hardware: ....................

Best programming tool: ....................

Best advert in *Acorn User*: ....................

Best article in *Acorn User*: ....................

Best dealer: ....................

* Best article and best advert from the November 1997 to September 1998 issue (inclusive). Best article can be a series or a one-off article

Competition question: What's the sheet feed capacity of the JP-190? ....................

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# Acorn WORLD

**London Arena**
**Docklands**
**16 – 18 October, 1998**

With only three months to go until the doors at London Arena open for Acorn World '98, preparations are steaming ahead towards what is surely going to be the busiest and most exciting exhibition for many years.

For full details of what is happening at the show you can visit the Acorn World website at http://www.argonet.co.uk/acornworld98/, but here is a summary of some of the latest developments...

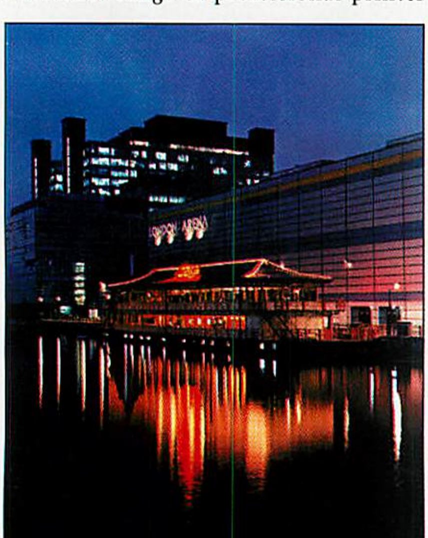


## Graphics and Imaging Area

Four of the companies at the forefront of Acorn graphics and imaging will be joining forces to create a dedicated *Graphics and Imaging Area* for the first time at Acorn World '98. *Avante* from Astute Graphics is destined to be publicly launched at the exhibition and London Arena will set the scene for the official launch of Phoebe alongside this associated new flagship package.

The stand itself is currently proposed to encompass the complete range of RISC OS graphics and publishing software from a number of established companies.

These include Alternative Publishing (file import/export software), Akalat Publishing (acknowledged experts in the Acorn field of graphics and publishing with their dedicated publication *Acorn Publisher*) and Spacetech with their unique *PhotoReal* range of professional printer drivers exclusive to the Acorn market. Spacetech also develop and produce the premier RISC OS bitmap application *Photodesk* which is a direct equivalent to Adobe's *Photoshop*. This area will be presented on one of the largest and most stylish custom-built stands at the show and will surely grab every visitor's imagination.



## Technology Partner's Pavilion

Following on from the huge interest shown in Samsung's 'Thinko' (one of the first 'Acorn at Heart' licensed products to be fully launched) at Wakefield earlier this year, it was decided that a *Technology Partner's Pavilion* would be an exciting addition to Acorn World '98.

This is an area that is sure to attract a great deal of interest not only from visitors but also from the wider IT media as it will be demonstrating how Acorn technologies are being used in licensed products across the globe.

At the time of going to press, Samsung and the Japanese electronics company Funai Electric Company have confirmed that they will be exhibiting and others are expected to do so shortly. For updates on this and all other features and exhibitors check the website regularly to keep on the ball!

## Ticket hotline

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## Best School's Website

Another exciting announcement is that Acorn, in association with Argo Interactive Ltd, will be sponsoring a competition for the *Best School's Website* in conjunction with Education Day at Acorn World '98 on Friday 16 October.

As well as highlighting the educational benefits of encouraging children to use the Internet to its fullest extent, this is intended to be an enjoyable competition that should provide a lot of fun for those schools taking part.

Websites will be judged on how effectively the information on the site is presented, how imaginatively the technology is used and the level of interaction present on the site. Ideal sites should contain useful information about the school, facilities for discussion and correspondence and a good range of educational applications.

Entrants should state, in no less than one hundred words, why they believe their school's website should be considered. Entries should be forwarded to schoolscomp@argonet.co.uk by no later than 25 September 1998.

## Is this you?



There was no room to move on the Acorn stand at Acorn World '97. But is this you wrapped up in the demonstration of ETRI's HandyCombi?

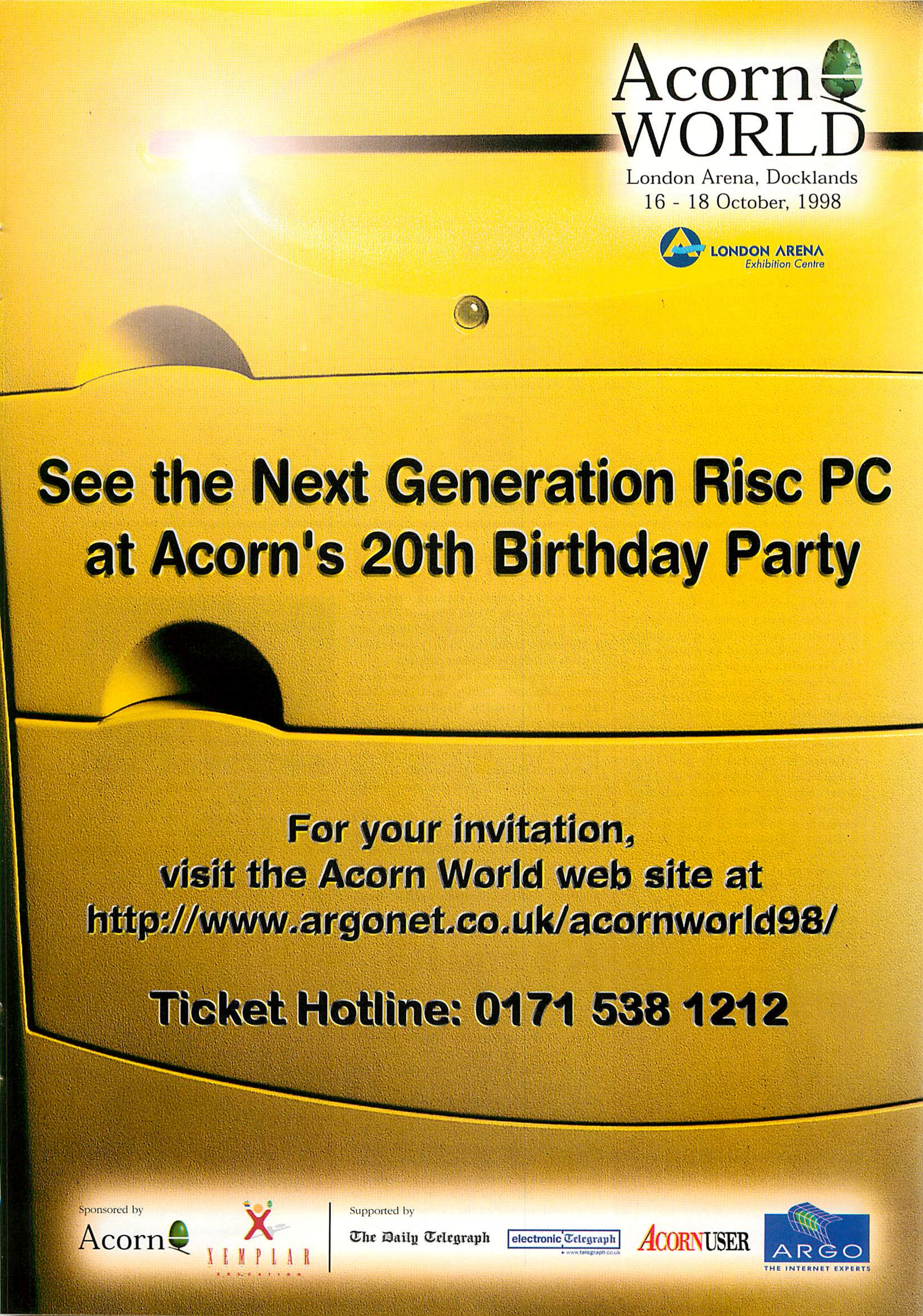
If it is then send a recent photograph to Acorn World/Acorn User competition, Acorn Computers Ltd, Acorn House, 645 Newmarket Road, Cambridge, CB5 8PB and you'll receive a free family ticket to this year's Acorn World show.

## Plus lots more

There is much, much more we could mention – such as the *Acorn 20th Birthday Museum*, *The Classroom of the Future*, the seminar programme and all the various exciting exhibitor's product launches – but there just isn't room in this issue to tell you everything! Visit the website for the full picture and remember to buy your tickets in advance! That number once again is 0171-538 1212.

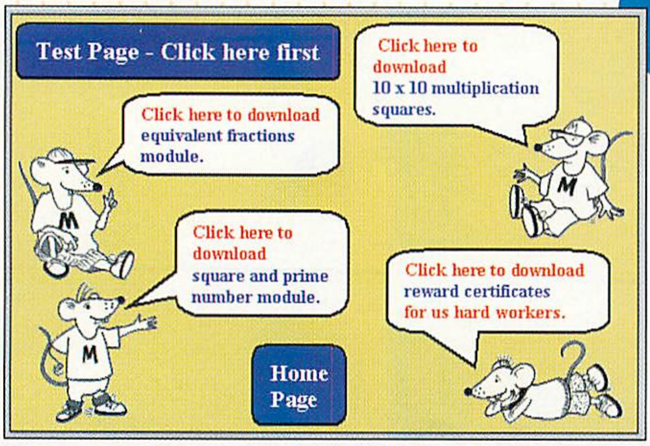
## Contact details

***Event Co-ordinator:***
E-mail: jcooke@acorn.com
***Acorn World '98 website:***
http://www.argonet.co.uk/acornworld98/
***Ticket hotline:*** Tel: 0171-538 1212
***Schools website comp:***
schoolscomp@argonet.co.uk
(closing date 25 September 1998)


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16 - 18 October, 1998
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# Maths for all

Interested in maths at Key Stage 2? Then take a look at *MathSphere* – www.mathsphere.co.uk – a new website designed to raise standards in maths education. Aimed at parents and teachers, it provides worksheets ready to download and use. Using the latest material and curriculum initiatives it is tuned into the UK curricula.




With the increased emphasis on mental arithmetic children are expected to be able to manipulate numbers confidently. In addition, with the Numeracy Project hot on the heels of the Literacy Hour by the year 2000, it is expected that an hour a day will be devoted to maths in school. *MathSphere* aims to be a resource for school and home with its site arranged by year groups and subjects.

**Acorn PDF readers are available as PD, for instance Pdf from Leo Smiers**

If equivalent fractions are the issue, find the module, find the difficulty level, download and print. Each module consists of a concepts page, between eight and 15 pages of work, answer sheets and, in some cases, practical follow-up activities. This is a subscription site and costs £25 a year, all the information is in PDF format and if you want to try before you buy there are some free pages to sample.

## Online futures

In Britain around seven million individuals have Internet access – the majority are male, under 35, live in the South, affluent, employed and have children.

Education and business are the two main reasons for going online and in a recent MORI survey for *Which? Online,* 75 per cent of those surveyed (users and non-users) believed that the Internet will become a vital part of future communications. This fits with the push to get schools online and for individual children to have their own e-mail addresses.

However, despite TV coverage and government initiatives, 61 per cent of non-users – around 25 million adults – said that they'd never go online. Around half of these see the Internet as irrelevant to them. What is more, one in four non-users didn't know that you needed a computer to get online and only 37 per cent knew that a phone line was necessary.

## Room to roam

**Argo Interactive (01243-815815) now have unlimited Web space on offer for schools on their ArgoNet Education Online Service. There's also unlimited e-mail addresses, a free school domain name, plus free customer phone support. Subscribers also have complete access to Argosphere. The cost? Only £120 a year.**

## Cultures and beliefs

New from Granada Learning (0161-627 4469) is *Exploring World Religions.* This CD-ROM is aimed at Key Stage 2 children and follows on from the highly successful *Aspects of Religion* for older children.



This concentrates on the six religions most commonly studied in schools: Buddhism, Christianity, Hinduism, Islam, Judaism and Sikhism, which are then divided into key themes such as Beliefs, Places of Worship, Holy Books and Festivals. They are all illustrated by specially commissioned authentic photos and audio interviews.

There is a print facility and within each section children can access their own notebook, where they can enter their thoughts and observations. This notebook is saved between sessions and can also be printed. In addition, a large, colourful timeline details the major events in each religion's history, which can be printed to make posters.

The aim of *Exploring World Religions* is to allow children to experience the impact of each religion on daily life through the eyes of other children. Furthermore, they can test out their new knowledge in a team quiz.

## A B and ICT

If your school is indulging in Literacy Hour panic and the idea of working out where to fit the computer in all of this is just too much, Sherston Software (01666-840433) have something to help. They've produced a leaflet called *Where IT Fits* which gives some ideas of Key Stage 1 and 2. What is more, you can access these ideas and research on using talking books at a free website – www.literacy.co.uk. Although this only covers Sherston products – and the Cambridge and Oxford Reading Tree programs when it comes to reading schemes – this could give you ideas on how to use other software within the Literacy Hour.

For instance, *Nursery Rhyme Time* could be used with Reception children as an animated big book for shared reading. The *Oxford Reading Tree Rhyme and Analogy Activities* could be used at Reception and Year 1 individually or in groups of two or three to practice and secure the ability to rhyme, fostering listening, reading and spelling skills. Meanwhile at Key Stage 2 *Rusty Dreamer* could be used with Years 4 to 6 as independent reading for text level work on fiction.

### Contacting me

You can contact the Education page by writing to me, Pam Turnbull at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP
or e-mail: aueduc@idg.co.uk

# Beware oracles bearing quests

**Pam Turnbull** looks at a new package for anyone interested in ancient civilisations

*Ancient Greeks* comes from the same series as *Romans*, *Ancient Egyptians* and *Vikings*. It uses more illustration and animation than video clips, which makes it a little speedier while not detracting from the content. The interface is also easier to navigate than those in some of the program's earlier brethren.

You're briefed by the Oracle who appears throughout the program to give guidance and tell you about her beloved Athens which she wants you to rebuild for her.

Basically there are eight buildings, each with two tasks attached. Choose your ruin and you'll see an outline of what the original construction would have looked like. To make this a reality you need to answer questions or complete puzzles which can be used as an extension activity or as an introduction to the topic.

For the latter you'll need your bag of goodies which contains a host of reference tools: A timeline, articles on science and philosophy, sport, art and theatre, gods and myths, health and medicine, words, letter and numbers and daily life.




## The gymnasium

If you opt for the gymnasium – though you can scroll left or right to any building which catches your fancy – the tasks are sport related as you'd expect. The first shows an outline of a sport and asks you to decide whether this was played in the ancient Olympics or not. Some, like basketball, are obvious. Others are not. If you don't know, click on the bag and then select the reference article Sport. You can listen to the information supplied as both text and commentary with illustrations to help you along. Olympians used to compete naked and this is shown in the images with all athletes posing in the best possible taste behind discreetly positioned scenery!

If you make a wrong choice you're kicked out of the gym and not allowed back in until you've visited the Sport article again. This is not very friendly and can be irritating at times, especially as rowing isn't mentioned in the commentary but counts as an ancient Olympic sport. Furthermore, the javelin is shown being thrown the modern way, not with a sling as covered in the Sport article, which annoyed and confused some of my more pedantic testers. To allay some of the frustrations we made a rule that if you weren't sure you had to check as this took less time than being kicked out of the gymnasium.







The second activity asked you which sports were played where – a matter of applying what you had heard and read. There is a notepad always on hand which is very useful especially for remembering some of the unusual names and words.

This is a little awkward to use and you often find yourself overwriting what you've done earlier. The trick is to make one note and turn the page to make another, you can then cycle through these when it comes to the questions. Finish both activities and the ruin is re-built and you can move on.

## The Temple of Zeus

The Temple of Zeus asks you to say which God you'd associate with particular activities. Your decision is helped along with a picture of the God and a family tree. Get it wrong and you don't start again but continue where you left off, which is a relief. The second task gives you a snippet of story and you must click on the missing name. The information bag gives you a potted history of the gods and a junior Illiad.

## Other places to visit

The Philosopher's house looks at cyphers and the universe, with information on discoverers, Polybius and Ptolemy. The Temple of Asclepius holds two excellent tasks matching Greek cures to ailments and matching the arguments of Hippocrates and a priest-doctor. The historian's abode uses the timeline tool presented as brief news reports and the school provides Greek words, letters and numbers – helpfully the excellent activity sheet book provides a number table.

The Agora opens up information on the society from politics to slavery and finally in the theatre you're asked to name the different parts as well as look at the concepts of tragedy and comedy. Complete the city and you can click around finding out more about everyday life.




## Conclusion

The activities are varied, intelligent, and ask children to think about what they've read and use it rather than just regurgitate it. I didn't like the way that some questions required information from an additional article to the one you were sent to for information.

The 'one chance and you're out' approach does ensure that children go back to the reference works rather than just answer by guesswork, but this was a little heavy-handed and more feedback on wrong answers would have been better. My testers took to the presentation and the quirky news accounts and in particular the sports commentary, although the terse wrong they received when they made a mistake could do with some improvement.

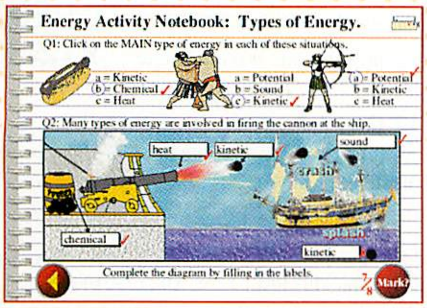
A spider's web in the top right of the screen takes you to a website with links to other Greek sites.

## Product details

| | |
|---|---|
| Product: | Ancient Greeks |
| Ages: | 7-11 |
| Price: | £40 |
| Supplier: | Anglia Multimedia |
| Tel: | 01268-755811 |
| WWW: | www.angliainteractive.com |

# Buying the right support

Do you want to add some ICT into your science, geography and history? **Pam Turnbull** looks at one option

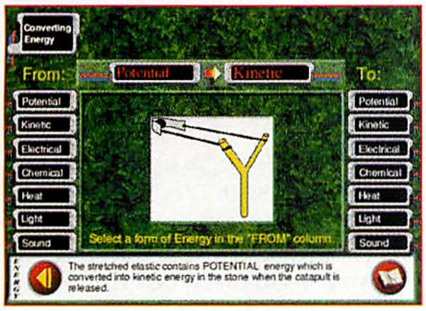



Sherston have come up with some very specific programs, which they are calling *Secondary Curricular Modules*. They are designed to stimulate discussion on a range of subjects and to provide on-screen activities to test knowledge in the classroom.

On the science front there are three modules, all looking at energy. *Energy 1 – Energy Forms and Conversions* offers three topics. *What is energy?* is the first, though you can pick whichever one you want. The text is clear and pitched well at this age group and there's good use of supporting illustrations.

Clicking on them – windmill, waterfall, sea, volcano, car, battery and so on – reveals types of energy, from kinetic to chemical. There's also a supporting diagram showing examples such as how wind energy works from the sun's infrared radiation heating the earth unevenly, to the wind turbine turning the generator.

Follow the arrows to turn the pages to more information or access the book icon

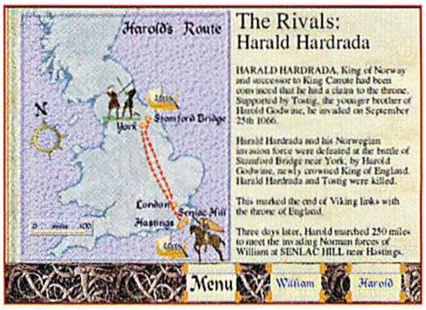



and find yourself in the Activity Notebook. Activities take different forms and all can be printed out. In *What is Energy?* you're given a paragraph and you must fill in the spaces using given words. The size of space gives you a clue to the word and when you're done just click on the mark button. All the answers are marked immediately and you can redo pages as often as you like.

*Types of Energy* asks you to read two short pieces of text and click on the first occurrence of a different energy form. When you've isolated these you can click on them for more information. The activity page asks a multiple-choice question and has you adding the right energy captions to a picture of a cannon firing at a ship.

The third section, *Converting Energy*, starts by asking you to click two different energy forms for an example of electrical to heat, such as a hair dryer. The activity page takes this concept and asks you to name the different energy conversions taking place in Stevenson's Rocket.

*Energy 2* shows the inner workings of hydroelectric, fossil fuel and nuclear power stations. The activities ask you to reconstruct a hydroelectric power station and use your understanding of the subject to fill in the missing words, put a fossil fuel power station back together and finally,

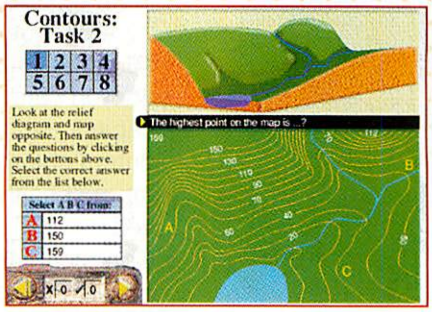



name station parts and answer questions about nuclear fuel. The latter is only partly marked by the computer, the Q&A being printed out and given to the teacher.

Finally, *Energy 3* looks at safety, supply and environmental issues, giving a brief introduction to solar, geothermal, biomass, wind, tide and wave energy. There is brief information, diagrams and a single sentence to capture the essence of the different fuels. Activities are mixed – from naming diagrams to sequencing production to teacher-marked Q&As. There's even a button giving viability facts and statistics for each of the different energy sources.

All the modules are easy-to-use and follow the same basic format. They can be worked through in different ways and the large T gives teacher information on age of pupils, focus, organisation, type of activity, skills used and time needed.

For geographers there are two mapping modules, *Maps 1* looking at symbols and co-ordinates. I have problems with the question marking here. For instance, you're told how many map symbols you correctly and incorrectly identified but not which particular ones were right or wrong. You have to work this out for yourself by

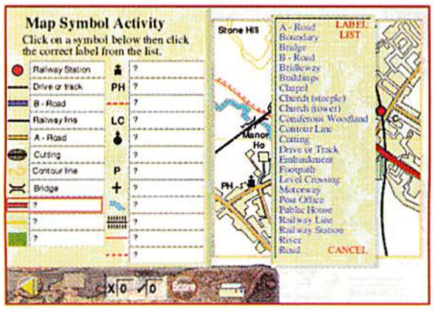



printing out the page and comparing it with the key. It's a useful technique to learn, but a little too time consuming here, especially as my students found it difficult to differentiate some items.

*Maps 2* covers contours, distance and bearings. It takes a practical approach using a compass and paper to deal with bearings and distance. After you're shown how to use a technique you're set some places to find or distances to measure.

Using Silva compasses can be difficult but this explains it well. The contours section looks at how the paper representation would look as a 3D cross-section and helps give maps some reality. In both these modules you're shown how and then given the chance to practice these specific skills.

I particularly liked the history module, *1066: The Rivals*. This takes one specific incident and looks at how we view its history using the original documents, opinions and facts – a good way to get students to



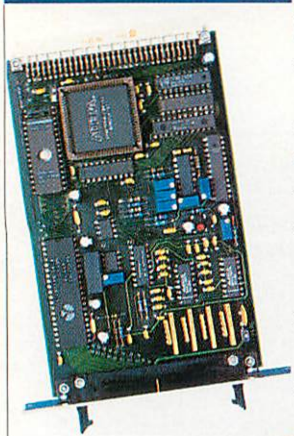

question what they read. It takes extracts from the Anglo-Saxon Chronicles and the writings of William of Poitiers plus images from the Bayeux Tapestry and part of the Anglo-Saxon family tree. There are four teacher-marked activities looking at the documents supporting the three different claims and the difference between fact and opinion. They ask students to put the case forward for each in their own words, supported by the sources. All in all this is the beginnings of an excellent resource library.

## Product details

| | |
|---|---|
| Product: | Secondary Curriculum Modules |
| Ages: | 11-14 |
| Price: | £35 each (1066: The Rivals £25) |
| Supplier: | Sherston Software |
| Tel: | 01666 840433 |
| Web: | www.sherston.com |

# ADC/DAC

## Analogue-digital and digital-analogue converter interface cards

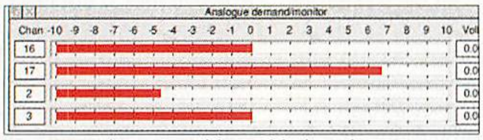


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- 16 analogue input channels
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- add-on cards can increase capacity up to 64 digital input/output channels.
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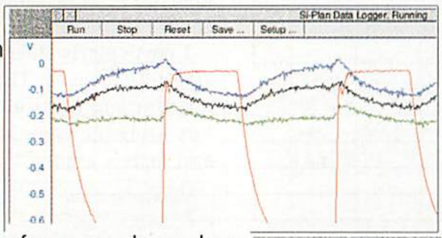
**Analogue Digital Control** Specify channel parameters: description • channel number • units • scale • zero. Then select any channel in one or more of the following formats:

**DAC slider** Display, monitor and control 4 channels.




**Digital I/O** Generate or detect a 0V or 5V signal.

**Data logger** Show data on rolling graph with variable timebase. Plot over seconds or many days. Save data to disc as CSV files.




**DPMs** Display data from any channel as a digital panel meter. Description and units entered in *AD Control* are incorporated.




**Waveform generator** Specify sine, triangle or square waves or import your own comma separated variable files.

**XY plotter** Plot data from two channels in XY format. Choose scaling and rate of sampling.




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**Prices**

Package including:
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**Si-Plan Electronics Research Ltd**

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01789 205849 email adc@si-plan.demon.co.uk

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| | A3020 | A3000/3010 |
|---|---|---|
| 30Mb | £36 | £79 |
| 60Mb | £49 | £99 |
| 80Mb | £59 | £111 |
| 170Mb | £72 | £124 |
| 210Mb | £84 | £131 |
| 330Mb | £94 | £144 |
| 420Mb | £107 | £155 |
| 512Mb | £115 | £162 |
| 810Mb | - | £187 |

SCSI

| | |
|---|---|
| 210Mb | £45 |
| 280Mb | £54 |
| 420Mb | £74 |
| 4.2Gb | £189 |
| 8.7 Gb | £379 |

3.5" IDE

| | Drive | with I/Face |
|---|---|---|
| 210Mb | £49 | £87 |
| 420Mb | £59 | £99 |
| 850Mb | £71 | £119 |
| 1.2Gb | £82 | £130 |
| 2.5Gb | £106 | £154 |
| 3.2Gb | £109 | £157 |
| 4.2Gb 5" | £119 | £165 |
| 4.2Gb | £122 | £170 |
| 6.3Gb | £148 | £196 |
| 8.2Gb | £203 | £251 |

*Lots of other sizes and types available plus SCSI interfaces etc.*

## Syquest drives

| | |
|---|---|
| 230Mb EZ Flyer Internal IDE | £122 |
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|---|---|---|
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| 16x | £45 | £150 |
| 24x | £51 | £156 |
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# star info

## Bent out of shape

**Author: Alan Lowe**



Bending and twisting plasma-like effects will be staples of *info forever. *BGDistort* from **Alan Lowe** uses SINEs and COSINEs to perform its wobbly results. These are precalculated and stored in a table for speed. The program then scans across the screen and, for each x and y, performs a quick look up in these tables. The resulting pixel is then fetched from the image map and plotted on the screen. Because the scanning loops work across the screen rather than the image, no holes are left lying around.

The image used for distortion is fetched from the spritefile *export*. This is a 320x256 Mode 13 sprite, although it merely contains four copies of the same 160x128 tile.

*arm_bg2* really needs a StrongARM to run at a decent speed, but *arm_bg4* and *arm_bg5* produce roughly the same effect but a lot faster. They do this by reducing the accuracy of the plot. Mk. 4, plots each pixel twice across the screen, while Mk. 5 plots it four times, and misses out every other screen line!

## I want to ride my bicycle

**Author: Keith Gaughan**

There is a reason. Honest. Just hang on a bit.

One of Windows' nice features is the ability to cycle through the available tasks running on screen quickly and easily. This is particularly useful when you have a desktop full of windows with not even an inch of backdrop visible anywhere.

**Keith Gaughan** has written a little utility to help perform this remarkably simply but useful operation. The program is called *Rothaigh*, should be pronounced 'Ruh-hee' and is the Irish verb 'to [bi]cycle' – hence the heading of this piece.

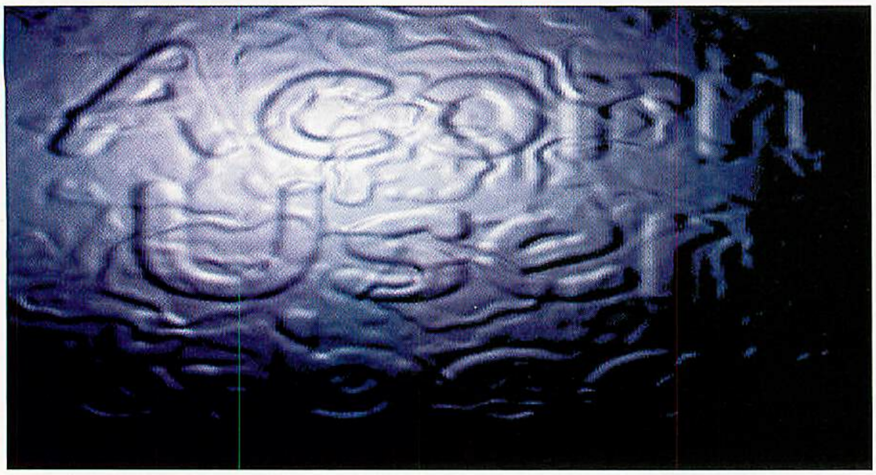
See told you there was a reason. According to Keith, *'Rothaíonn do fhuineoige agus bí sona mar sin, erm, sort of!'*. But since we don't know what that means, we'd better not publish it.

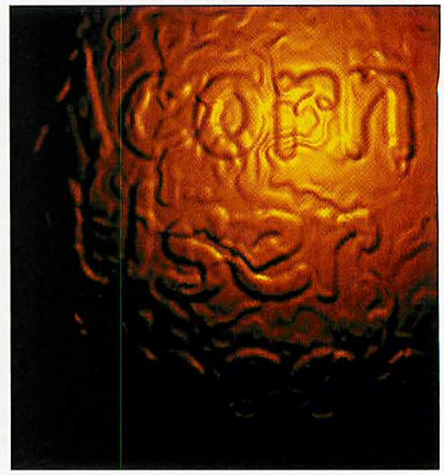
There are two ways of operating *Rothaigh*. You can either click on its icon with Select or Adjust, or press its hot-key. By default this is Ctrl-Tab, but it is possible to change it – click Menu over the icon and select the 'configure' option. The current hot-key is shown in the window, to change this just press the new sequence you'd like to use.

Click save to preserve this. The config window also allows you to hide the iconbar icon. Once hidden, you'll have to use the other configurable hot-key to view it again!

# Bump and grind

Author: Alain Brobecker





**Alain Brobecker**, the author of last month's batch of springy, stringy and generally bouncy programs has been busy again. This month he has sent us a demonstration of *bump mapping* or, to be brutally correct, *environment mapping*. This sort of effect has been used a great deal in rolling demos on PCs. The code will work on all machines, but will be a tad slow on poor old ARM2s. On Risc PCs a definable palette is used to produce a fetching red/orange display. On older machines a more traditional greyscale is used.

The source code is provided and is well commented if you'd like to take a look at the innards of the routines. Possibly more interestingly, Alain has supplied some more human-friendly documentation on the algorithm:

'First we create the environment map, for the special purpose of *bump mapping* we want it to look like a spotlight. For this we set the intensity as an affine function of the distance d = SQR(x - y)

```
envmap(x,y)=255-2*SQR((x-128)^2 + (y-128)^2)
```

'We now need to create two displacement maps, one for each direction x and y. For this we use an image made up of heights and compute the differences between pixels (i.e. the slope). We add 128 because we are using 8-bit maths, and 128 is 0.

```
disp_x(x,y)=h(x+1,y)-h(x-1,y)+128
disp_y(x,y)=h(x,y+1)=h(x,y-1)+128
```

'Now we draw the actual frame. With a light source at (lx,ly), we compute the correct displacement of each pixel on the screen

```
dx = disp_x(x,y)+lx-x
dy = disp_y(x,y)+ly-y
IF (dx,dy) is in the environment map THEN
screen(x,y) = envmap(dx,dy)
```

All these operations need to be performed for each pixel and for speed this is written in Assembly – only the management is left in Basic. The file *Height256* contains the raw data used for the image – try changing it to produce a different image!

# Keep on tracking

Author: The Mad Hamster aka Robert Collins

**The Mad Hamster** has been at it again. No, I don't mean chewing through the TV cable – I mean writing desktop utilities. Our extensive intelligence network informs us that this particular rodent also goes under the name of **Robert Collins** although we believe this too may just be a clever anagram of his real name **Ron Scrotebill**. But, as always, I digress. The fact of the matter is that Robert/Ron/Rodent has produced an application that will keep a detailed log of your computer use and can prevent its misuse too. The program is called *KeepTrack*.

*KeepTrack* logs the startup and shutdown times of your machine, prevents reconfiguring and mode changes, and logs all tasks started, preventing those on a task 'blacklist' from being run at all. Clearly it is designed for use primarily in an environment where desktop fiddlers are to be prevented from fiddling too much (i.e. the classroom).

Further security measures include checks to see that the log file isn't tampered with, and also provides limited protection against the *HideTask* module which can start a task without existing tasks receiving notification. Note that *KeepTrack* refuses to be killed from the Task Window (for obvious reasons).

You can run *KeepTrack* from a filer window, although you may prefer to include it in your boot sequence. An installation program is provided to copy it there – run *InstallKT*.

Inside *!KeepTrack.Configs* you will find a file called *BanTask*. Simply add the names of any tasks you wish to be 'banned' from loading (entering each name on a single line as it appears in the task manager window).

To view the log file use the *!ViewLog* application. Note that you will be prevented from tampering with this file while *KeepTrack* is running, so should you want to start a new log file, you must delete the existing one **before** *KeepTrack* is installed. (If you have included *KeepTrack* in your boot sequence, you will probably have to Escape while booting, and manually delete the file from the command line!) Of course, *KeepTrack* isn't foolproof – it's merely designed to prevent idle hands from messing around with all the machines in the classroom/office.

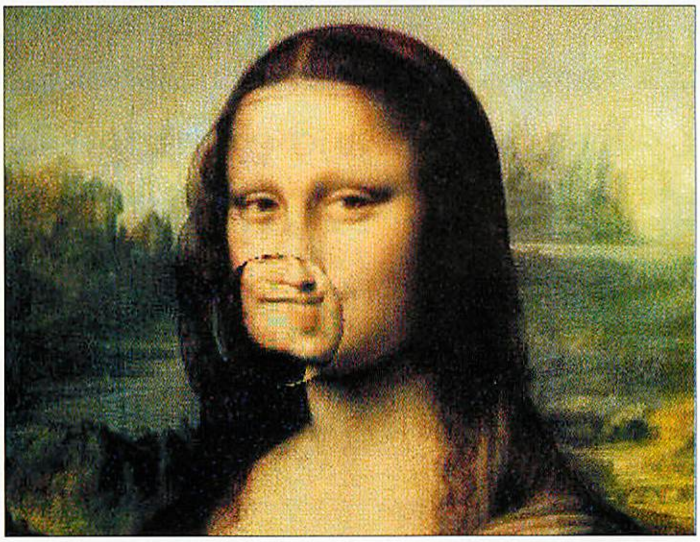
## STUFF AND NONSENSE

Because of unprecedented interest in our nonsense competition, we are still sifting through all the entries. We have therefore decided to hold off announcing the winner and runners-up until next month.This also gives the last few stragglers a chance to get their entries included in the final judging.

Thanks to all those who entered – watch this space for some top-notch nonsense.

# A Lisa through the magnifying glass

Author: Mark Adcock



It must be all the hot weather or something, but this month has turned into the let's-distort-a-sprite issue.

**Mark Adcock** has taken that classic image by Da Vinci and stuck it under a rather unflattering magnifying glass. Left to its own devices, the glass will bounce around the screen, changing direction every now and again. For a more detailed look at exactly what effect the glass is giving, hold down Select and you control it with the mouse.

For a little bit of extra interest you can try changing the value of *var*. A larger value will mean the program will try to cram more of the original picture into the circle. If you are careful you can also change the size of the circle by changing *radius%*. The only problem being you have to change *radiusshift%* to match. In practice this means you can only really have 32 and 5 or 64 and 6. Any smaller and the circle is too small, any larger and it completely swamps the screen!

A rather more dramatic change can be achieved by removing all the lines from *SYS 6,19* to *CALL plot*. This stops the program erasing the old distorted images, so subsequent magnifications get compounded.

# Open sesame

In a recent experiment we ran into one of the most annoying, er, features of the Acorn C implementation. When using the file handling call *fopen* to open a file for input or output, it is only possible to have 16 files open at once. Three of these are automatically assigned for *stdin*, *stdout* and *stderr*, so this only leaves 13 for the user. In normal life this should be quite sufficient for anyone, but the problem showed itself while trying to port a piece of code from the PC which regularly had 20 files on the go at any one time.

The problem arises because the C library maintains a fixed array of FILE structures. As files are opened with *fopen*, a pointer to a free FILE is returned to the user. If there is no FILE free, then a null handle is returned and the file cannot be opened. The sensible course of action would have been to implement a linked list rather than a fixed array, but unfortunately this was not done.

After many failed attempts to get round this problem, we eventually hit on the cunning idea of using *freopen* to re-open the file rather than *fopen*. We discovered that as long as *freopen* is given a valid FILE * as input, it is quite happy to use this to reopen the file, it does not have to be within the C-library's static array. In other words, it is possible to allocate your own FILE block and pass it to *freopen*. After a little bit of trial and error we worked out what was needed in the block to pass to *freopen* and write a simple function to emulate *fopen*:

```
FILE * fopen2(char *file, char *mode)
{
FILE *h = calloc(sizeof(FILE), 1);
char *e = calloc(24, 1);
h->__extrap = (void *)e;
return freopen(file, mode, h);
}
```

We're not entirely sure what the '__extrap' pointer is used for as there is no information in the stdio.h header file, but setting the two blocks to 0s is enough to fool *freopen*.

The only limitation of this system is that these files will not be automatically closed when your programs quit – normally files are closed when the program exits either naturally or because of an error condition. To get round this you will need to link these new error blocks into a linked list (or store them in a static array :-), write an *atexit* handler and close them.

If all this is meaningless to you, don't worry – it will only be of use to the C-nuts in the crowd.

# 24-bit Vibe!

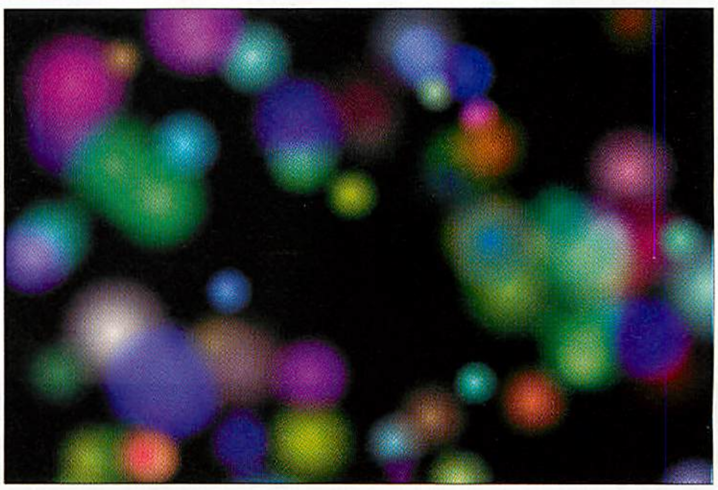
Author: Jan Vibe

It had to happen sooner or later I suppose – our good friend **Jan Vibe** has bought a Risc PC and has been unleashed onto the world of 24-bit colour and definable palettes. Will the world ever be the same again?

Ever cautious though, Jan's first experiment is quietly understated. *TrBall* simply plots coloured balls on the screen. 'Simply?' no, of course not. These balls are semi-transparent. Their opacity is gradual – at their edges [does a ball have an edge?] there are almost totally transparent, but at the centre they are opaque.

Once the screen has been allowed to build up for a while, and you get a whole load of balls on top of each other, the image is remarkably hard to focus on – it looks blurry no matter what you try to do.

Jan finishes by saying the program is all in Basic (as usual) and 'is not compressed in any way'. Not compressed maybe, but has anyone ever been able to follow one of Jan's seemingly impenetrable procedures?



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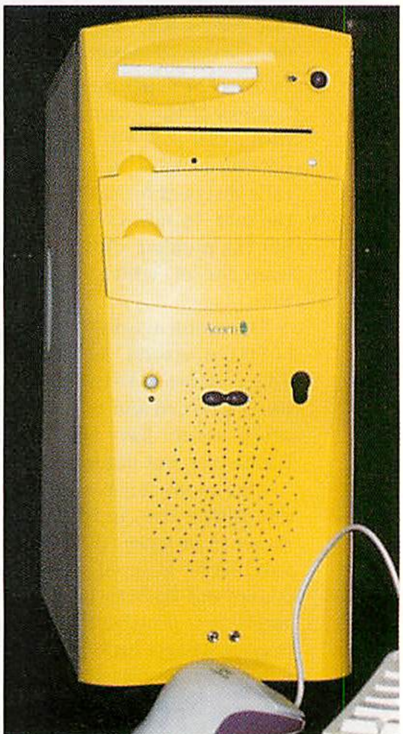
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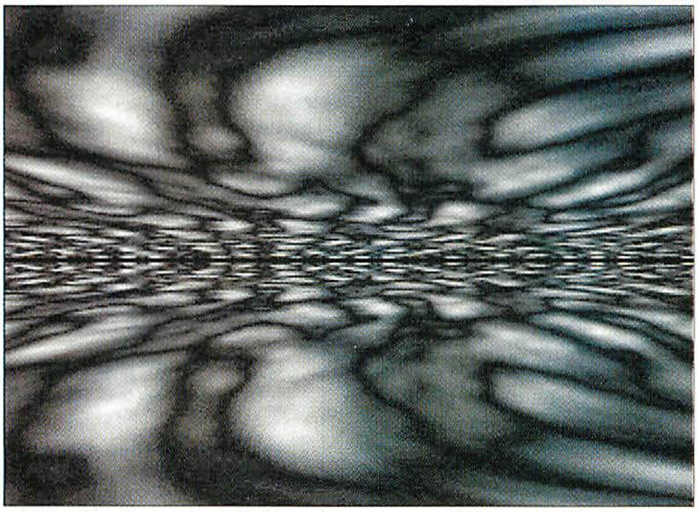
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# Looks like rain again

**Author: Thomas Madams**

Remember the *Cloud Challenge*? The challenge that will never die? Well, here's the latest late entry from one **Thomas Madams**. When I first ran the program I must admit that it reminded me of Sunderland Civic Centre underground car-park. Only slightly nicer. Thomas relates the history of this disturbing exercise in texture mapping:



"This little demo came about when I decided to write a 3D racing game in the style of *Mario Kart*. A few weeks later I gave up and the code was consigned to languish in the half-finished programs disc box. It was only very recently I decided to update it and add a sort of 'wibbling' effect.

"I won't go into details on how it all works (I'm not too sure of that myself), but needless to say it has been optimised to death and runs at a whopping 25 frames per second even on my ancient A3010. The wibbling effect doesn't kick in for about 10 seconds so don't give up too soon."

(And by the way, if you come across an X-reg MG Metro in the demo, it's ours – we just forgot where we parked it.)

# Trail by Julia

**Author: Richard Wareham**

**Richard Wareham** has been busy converting Unix screen-savers from his Linux machine. And I thought Linux was the kid from Peanuts with the blanket.

In any case, Richard has souped up the original while porting it, and the result is quite magnificent. As the author suggests, the program is better viewed than described. We've featured animated *Julia* sets before, but this version is the best to date. Basically, it displays a "morph between different *Julia* sets along with a fade-trail".

When run, you have the option of displaying the position on the screen corresponding to the current *Julia* set. If you answer Y, a comet-like entity will bounce around in an uncomet-like manner, as a sort of "you are here" sign in fractal space.

You also have the choice of low or high resolution (mode 9 or 27). The higher resolution version will only run at a reasonable pace on Risc PCs and beyond.

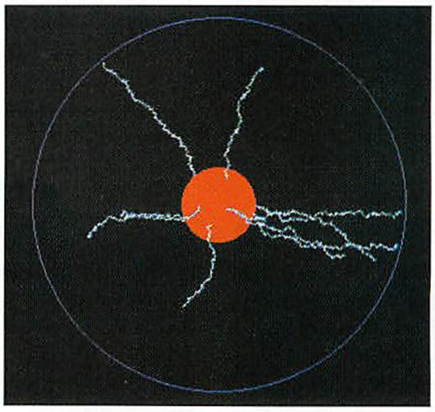
# Multiple Orb-Plasmas

**Author: Rob Jeffs**

While rootling through the *info pile, we came across these plasma balls from regular **Rob Jeffs**. Apologies to Rob for sitting on them for so long (and we certainly don't recommend sitting on plasma balls for any length of time).

Rob was inspired to write these demos after seeing a program by another regular, Philip Mellor, in the June 1997 issue. In fact, I seem to remember that the whole plasma-ball thing was one of our unofficial, ongoing challenges.

*PlasmaB* is the original Basic version to demonstrate the principles involved. In this test version, a single bolt of plasma is generated and the routine responsible is pleasantly recursive. Essentially, a dot of plasma is plotted and then the bolt branches out in random directions until it moves closer to its target position on the rim of the sphere. A new target position is chosen after (up to) 10 zaps.



*Plasma9* is a mode 9 machine-code version of the simple Basic prog. There are several key differences: It goes a lot faster; there are several bolts zapping at once; subtle use of blue and cyan adds that extra electricity to the whole caboodle and the destination points of the zaps move along too. *Plasma27* is simply a mode 27 version that will look a little less 'squashed' on most monitors.

# Linkman

**Author: Nicholas Kingsley**

**Nicholas Kingsley** has provided a library of routines to create and handle linked lists in Easy C/C++. Linked lists are extremely versatile structures, but I always seem to end up writing routines to handle them from scratch. Nicholas's routines should save a lot of time and debugging, and seem to be versatile enough to handle all eventualities.

You will find several files in his directory on the cover disc: *LinkList/H* and *Types/H* are the C header files. *LinkList/L* is the actual library routine and *TestLink* is a small test program, the source of which is also provided as *TestLink/C*. Finally, there is an extensive help file which explains how to use the library in detail. We will just give you a flavour of what can be done here. The lists created are 'double', each element containing pointers forward and back. This makes some operations much easier/quicker. Each list is founded on a *control block* and, uniquely, the elements of the list may be of variable lengths if required.

When a list is first created, you can choose whether memory will be allocated from the RMA or from a dynamic area (RISC OS 3.5+). Thereafter, a variety of routines allow you to add and delete nodes, skip forwards or back through the list, find a particular node and even sort the list using a supplied comparison routine.

# Have you ever seen me dancing? I mean *really* dancing

**Author: Nigel Stoner**

If you haven't, you should consider yourself mighty fortunate. However, there is some impressive virtual footwork afoot from one **Nigel Stoner**. We've featured stick-men bopping along to *Tracker* files before, but nothing quite like this. The instructions on the box said: "Tune into Kiss FM. Turn off the lights and set the *RAVER* dancing, watch those intricate (and impossible) arm movements as she waves her glowsticks in the air." She could have someone's eye out mind.

# RedArrows

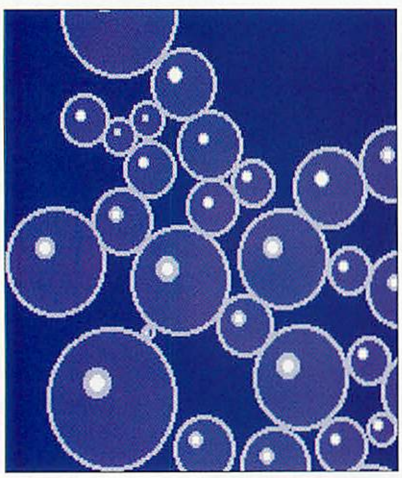
**Author: Nigel Stoner**

Now, if you're anticipating a 3D texture-mapped flight-simulating extravaganza, you'll not be disappointed. Well, a tad maybe. **Nigel Stoner**'s next offering features nine Lissajoux figures in close formation. "Watch out for the singletons" he says – sound advice for all you bridge-playing daredevils out there.

# I'm forever blowing bubbles...

Not the punchline to yet another Michael Jackson joke, but the tenuous introduction to **Nigel Stoner**'s third offering of the month.

*CTKiss1K* usefully packs bubbles into the smallest space such that they don't touch. The program also qualifies for the 'exactly 1K long' category. The overall effect is very 'sixties' with a distinctive pop-art, airbrush feel.



# PROGRAMS ON THE COVER DISC

From time to time we get the odd query about using *info programs on the cover disc. Since there will be some new readers every month (hopefully!) it is probably worth mentioning a couple of points to avoid confusion.

Because cover disc space is limited, all the *info programs (and other items) are compressed into archives which can be read with the supplied application *ArcFS*. Many programs – graphical doodles and the like – can be run straight from the disc with no problems. Some, in particular those that need to create or modify files, will need to be copied to your hard disc (or some other writable medium) before use. We also sometimes suggest modifications that can be made to programs and in this case too you should copy the program somewhere else before tinkering with it.

Sometimes we carry utilities and desktop extensions and we will often recommend you add these to your library or boot sequence (should you wish to use them). Quite where you copy them will depend on your machine. For example, on my Risc PC I would copy a new utility into *$.!Boot.Library.Commands*. And if I wanted an application to load automatically, I would copy it to *$.!Boot.Choices.Boot.Tasks*.

## *QUIT

All submissions are welcome – doodles and applications, hints and tips, cheese and onion to our usual haunt please:

***INFO, *Acorn User*,**
**IDG Media, Media House, Adlington Park,**
**Macclesfield SK10 4NP**

or, e-mail us (including your real address please) at:

**austarinfo@idg.co.uk**

No e-mail submission should exceed 100K please. Screenshots, program details and history, diagrams, suggestions for customisation – all are a pleasure to receive. We always have limited cover disc space, so cannot accommodate vast applications, tracker files or adventure games, however good.

You needn't include a letter but please put your name, address and program title on every disc and include a text file containing your name, address, disc contents and program details. A SAE will ensure your discs are returned. If you are responding to a challenge, please mark your envelope accordingly.

## Compatibility table

| Program | ROS 3.1 | ROS 3.5+ |
|---|---|---|
| !Julia | Yes | Yes |
| TrBall | No | Yes |
| CTKiss 1K | Yes | Yes |
| Raver | Yes | Yes |
| Red Arrows | Yes | Yes |
| !Cloud | Yes | Yes |
| arm_bg2 | Yes | Yes |
| arm_bg4 | Yes | Yes |
| arm_bg5 | Yes | Yes |
| Plasma 27 | Yes | Yes |
| Plasma 9 | Yes | Yes |
| Plasma B | Yes | Yes |
| !Rothaigh | Yes | Yes |
| !Keep Track | Yes | Yes |
| EnvMap RPC | No | Yes |
| EnvMap | Yes | Yes |
| !Glass | Yes | Yes |

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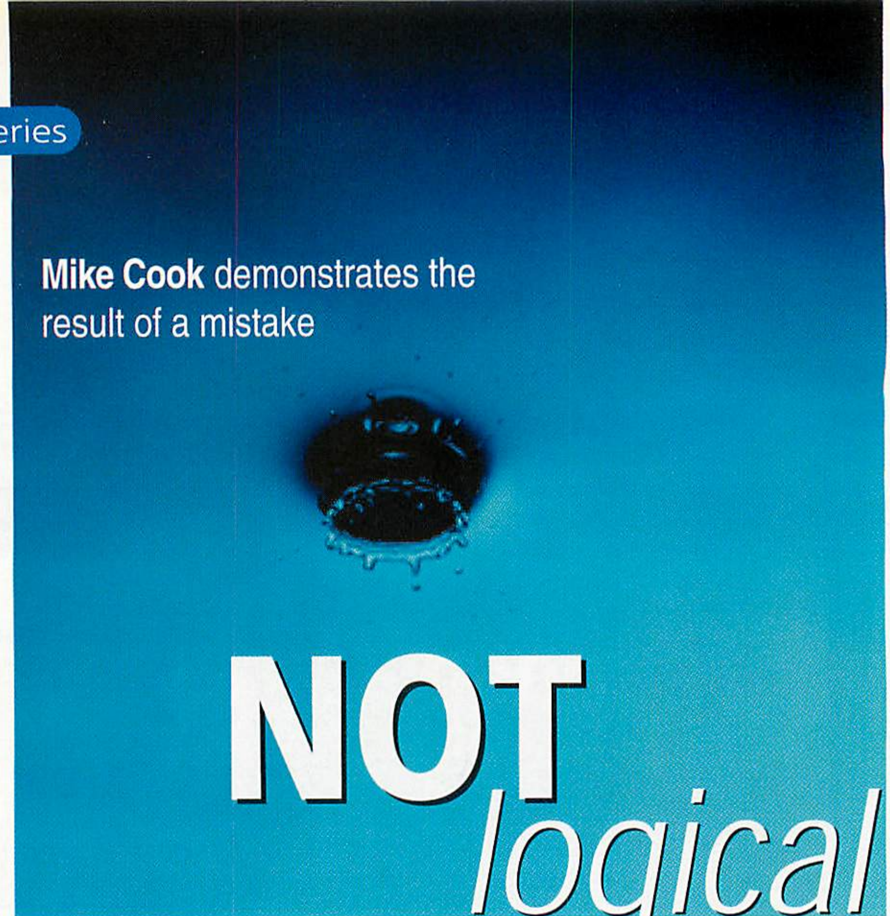
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# NOT *logical*

**Mike Cook** demonstrates the result of a mistake

Sometimes you make mistakes and this month's project is one of those times. Not the project itself you understand, but the implementation. I wanted a logic oscilloscope to investigate the signals for a future project and having recently completed an analogue oscilloscope (July 98), I thought I would modify the software for the new task. In retrospect that was a mistake and it probably would have been quicker to start to write it from scratch as the two projects are really more different that I had first imagined.

The idea is simple – use the printer port to read in bytes and display them graphically as logic levels on the screen. Note, you will need a computer with a bi-directional printer port for this project. However, where as an analogue oscilloscope is used with a constantly updating display and occasional freezes to examine the waveform, I found that in practice you use a logic oscilloscope in exactly the inverse way. That is, most of the time you want a single sweep to study the waveform and occasionally you want a real time display. As hindsight was a development tool not available to me at the time, I started the project and proceeded to hack about at the software.

The size of the memory available for holding a scan's worth of data was determined by the original software design and fixed by two constraints. The first was the size of the icon that made up the display and the second was the length of time it took to read in that many samples.

It couldn't be made too big otherwise the display would not update fast enough. The data acquisition speed was limited by the serial A/D converter and the speed the output pins could be changed through the legal SWIs. However, in the logic version you only needed a single read of the printer port to acquire a byte of data and this takes 2.5uS. Therefore, in retrospect I could have had much more data being read in during a single sweep. Mind you, at just over 2K, it is still enough to plough through for most jobs.

The basic controls are similar, Single Shot/Run and Arm, but when it comes to triggering, logical operations are a different matter. Instead of treating each sample as a number, you need to consider it as a number of separate bits. For each bit you need to be able to set the trigger level at *zero*, *one* or *don't care*. This last state allows you to include, in the trigger word, only those bits you want. It also means that unlike the analogue oscilloscope you don't need a separate switch to turn the triggering on or off.

Instead there are eight boxes – one next to each trace – and when you click on them with Select they toggle through each of the three states in turn. However, having a trigger condition that includes a *don't care* state makes the programming rather tricky. The solution I found was to build up two bytes from the front panel trigger information, the first is used as a mask and the second a comparison or look-for byte. Figure I shows how this is built up for each of the three possible trigger states for a bit.

The *don't care* state has a zero in both mask and comparison bytes, whereas a *one* has a one in both bytes. For triggering on a logic zero you need a one in the mask and a zero in the comparison. The way it works is shown in Figure II, the input data is first ANDed with the mask and the result is compared with the look-for byte, if they are the same then the trigger conditions have been met.

In practice this needs two loops – one to wait until the conditions have not been met and another following it to wait until they are met. This is to ensure edge triggering occurs which is needed for a stable trace in the continuous mode. Also in these trigger loops there needs to be some sort of safety net. If a trigger condition does not occur, the computer would hang looking for it.

So, each time round the loop a count is made of how many times the input has been examined. If this exceeds a certain number the routine ends, the display is not updated and control passed back to the Wimp. Under these conditions, mouse movement might be a little jerky due to the time spent in the trigger loop, but it is still possible to click to change the trigger conditions or abort the acquisition.

Once the data has been gathered it can be examined just like the analogue

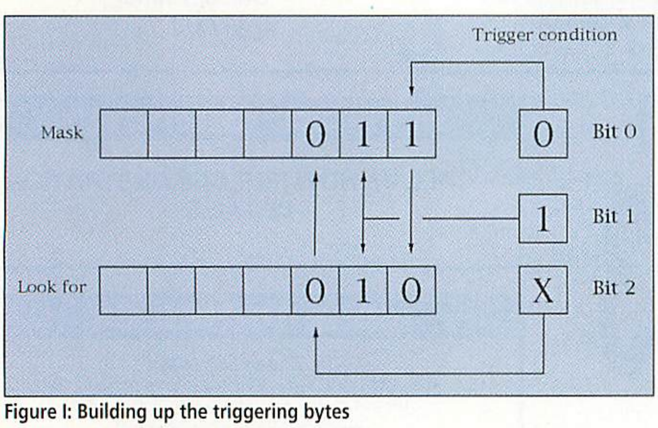



Figure I: Building up the triggering bytes

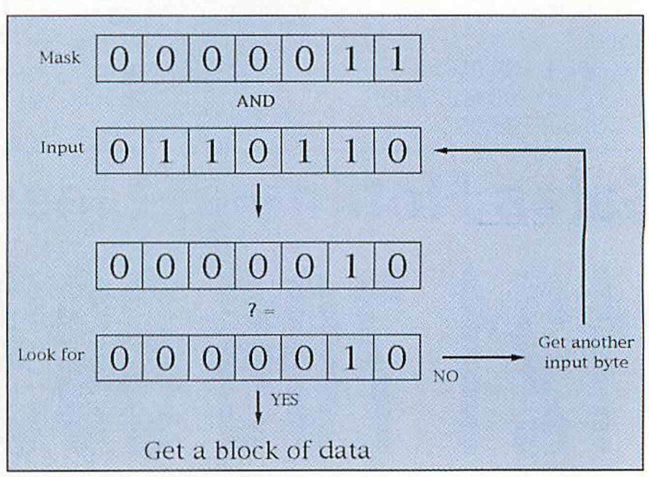



Figure II: The triggering process

oscilloscope. You can zoom in for a closer look at the bits or click Adjust on the display to set a blue reference line with subsequent Select clicks measuring the time between the current pointer and the reference.

However, when dealing with logic bits you often want to know the spacing between logic transitions. Rather than use the above method to make measurements, I have implemented another method where the computer does the work of finding exactly where to click.

At the bottom right hand corner is a set of boxes entitled 'Analyse Ch 0' and this looks at Channel 0 or bit 0 on the input. The current state is the value of this bit at the left hand side of the display screen or if it is showing the blue reference line. Also, there is a number showing how many samples or how long it is before the next logic transition. Clicking the up arrow will scroll the display to that point and the distance to the next transition will be calculated.

If the computer beeps at you, there are either no transitions before the end of the buffer or you can't scroll to the transition, as there would not be enough data memory left to fill the whole display. If that is the case, click the display with Adjust to put a blue reference line on the screen. When this is on the display scrolls to that point and when there is not enough memory to scroll the reference line itself moves.

If you want to move backwards to the previous transition, click on the up arrow with Adjust instead of Select. This sounds quite complex when written down but it is very intuitive to use and, as you can see, is a very different form of analysis from an analogue oscilloscope.

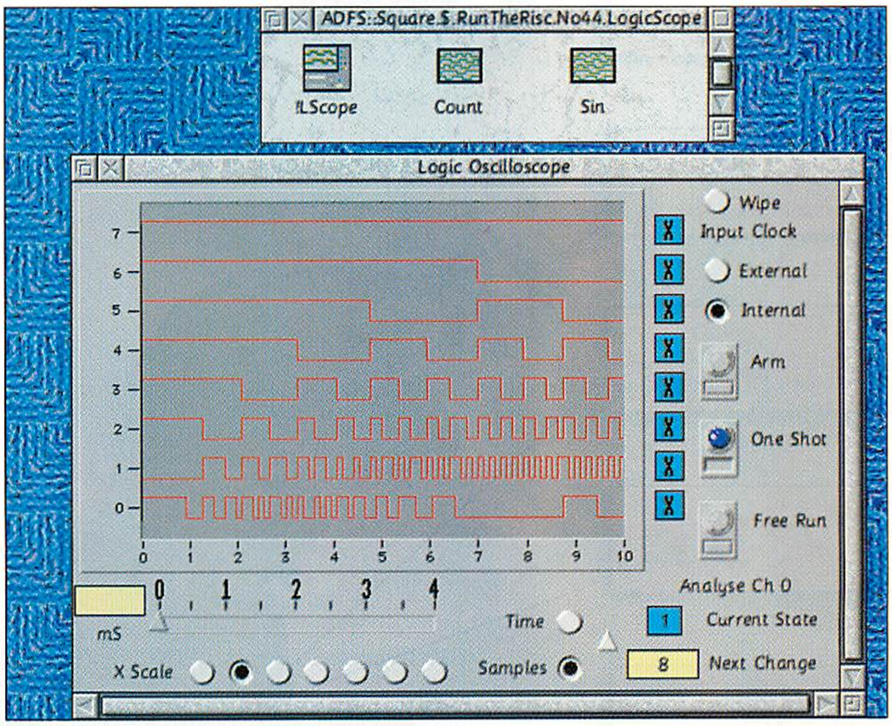
Now what if you don't want to analyse the transitions on bit 0? All you have to do is to click on the trigger box of the channel/bit you want to analyse with Adjust and the display and the analysis will switch to that bit.

When I used this system in anger I found that I did not have enough recording time for what I wanted to see. Therefore, I have put a menu selectable sample rate adjustment. With this you can adjust the time between each sample from the fastest of 2.5uS to 1mS per sample. With the largest data buffer size this gives a maximum recording time of 2.7 seconds, a long time in the world of digital logic. If you want to look at anything longer you are best looking at the signals in real time. However, there could be occasions when you want to synchronise the incoming data to an existing clock, therefore I have included the option to switch between an internal and external clock.

The internal clock inputs data at the preset rate, whereas the external clock uses the falling edge of the Busy line to clock in the data. When you are using this mode the maximum input rate is halved to 5uS as the software has to see both the logic zero and logic one on the Busy line. Note, however, that once the trigger conditions have been met here, if pulses are not supplied to the Busy line, the computer will hang. Then not even the magic Alt+Break will save you.

I also felt that there was a need to save the waveforms for reference, later analysis or as input to other programs. Therefore a save facility has been introduced for this oscilloscope. There are two sample files on the cover disc, *count* is a straight forward binary count and *sin* is the digital representation of a sine wave and makes an interesting looking display.

In last month's sampling article I explained about aliasing, that is getting false signals through not sampling fast enough. With the logic oscilloscope there are two types of aliasing that can occur – sampling effect and display effect. The display effect aliasing is caused by the display routines missing out some data values in order to plot the whole data on the available width of the screen.



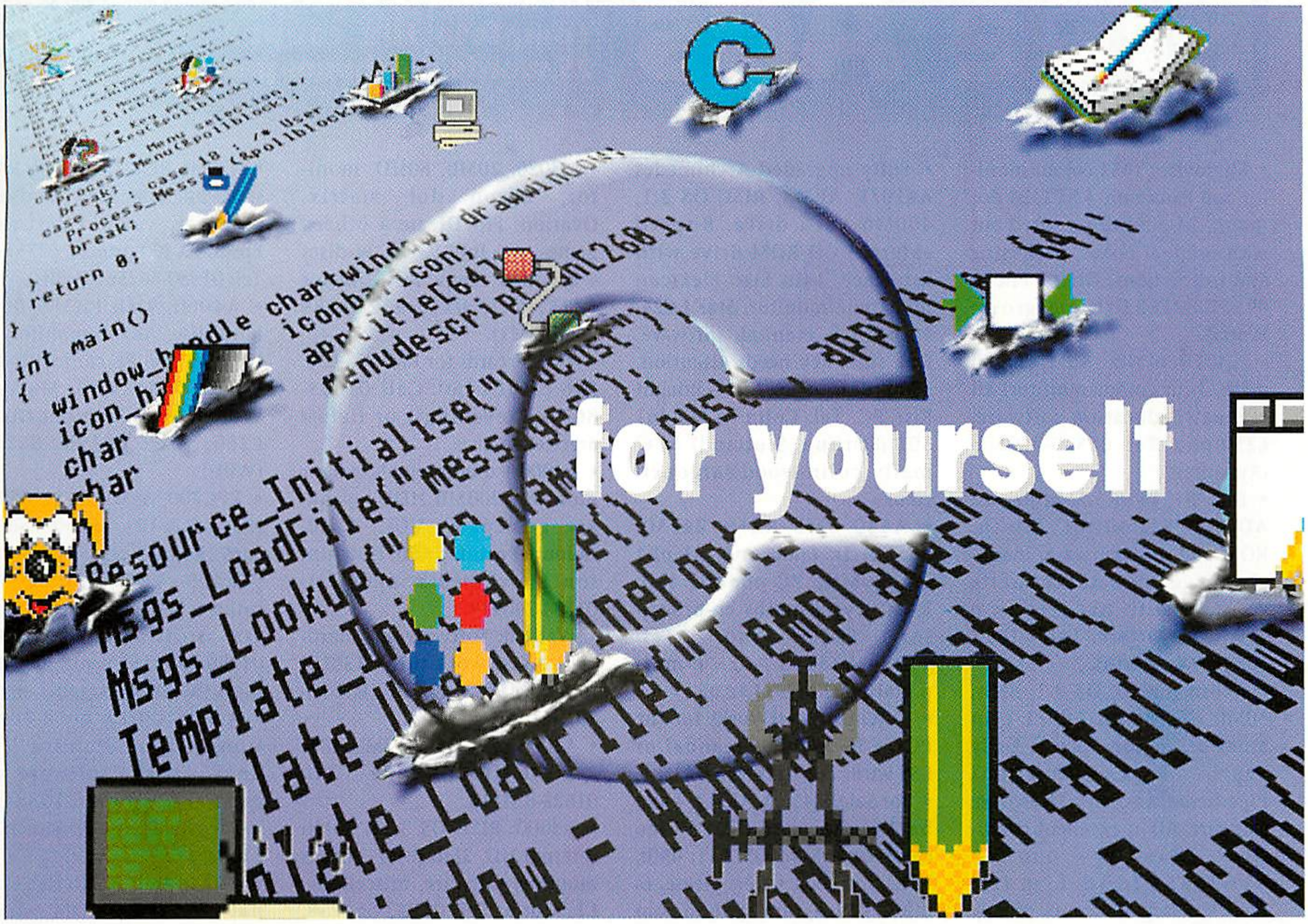

To see this for yourself, load in the Count waveform from the cover disc. Now look at bit 0 under the highest magnification, you will see that it alternates between zero and one. Click on the X scale buttons and you will see this trace become more and more squashed up. However, a point will be reached where this trace looks like it is at a permanent zero state. This is because the samples selected for display are always the same logic state. It is purely visual and does not affect the analysis of the data.

Sample aliasing on the other hand is real and does affect the data, however due to the digital nature of the signal this is more apparent at rates close to the Niquis rate but still faster than it. Suppose you are sampling a square wave at four times its frequency, that is you have four samples per cycle. However, those samples are not synchronised to the incoming frequency and so could appear anywhere in the waveform during successive cycles.

The result is that you always see at least one sample high and the other low but the mark /space ratio (ratio of up and down) varies and it looks like you have an irregular waveform. The answer is to sample more often, but you need to be aware that this can happen so that you are not caught out looking for nonexistent instabilities in your circuit.

I did waste a lot of time chasing down strange faults, for example a small change in a piece of code would suddenly cause the program to crash, even though I knew that the modified instructions had not been executed yet. I finally tracked it down to my numbering of the icons in the windows template. As I had modified this from the analogue oscilloscope there were some icon numbers missing. This was then resulting in spurious and large data allocation in the window records which was spilling over into other areas causing window information to be scrambled, erroneous error messages or the whole program to crash. This is a lesson worth learning, don't have any gaps in icon numbering in template files with indirect icons.

This logic oscilloscope is particularly useful when you want to analyse serial data waveforms, especially waveforms that are not the standard asynchronous data type. Which is what I wanted in the first place for next month's project, see you then. AU




JACK KREINDLER

**Steve Mumford** looks at how changes in data structure affect the operation of a program

Last month I introduced some of the details behind the planned user interface for our label design application – it became clear to me that a method of editing involving a master template was necessary in developing the ease of use I was after.

The idea of having a parent label, whose properties are inherited by its children, affects the scheme of data storage quite radically, especially if those children can 'disown' their parents and develop their own characteristics later on in their lives. This month I'll be looking at the data structures themselves and seeing how changes in those structures can influence the manner in which the program is likely to operate.

As outlined above, the master label is designed to pool together all the general features of a set of labels and allow the user to create a type of form that eases prolonged data entry. In this way, we simplify the process of label creation while retaining the flexibility to add or delete elements to specific labels later on.

What sort of information do we need to store on the master label? Some major features will be shared between master and offspring labels, such as the graphics and text field lists, but some features will be held by the master label alone.

These would include global features like label size as well as extra information that isn't relevant for the children – with automatic importing of data in mind, the order in which the fields are to be filled could be stored here. I was keen to be able to disconnect a newly created label from the influence of its master so that any 'unusual' labels could be created without having to alter the master and upset formatting elsewhere.

Implementing this would mean having a flag for each label to indicate whether or not it was still under direct control, so as soon as one label 'opted out', changes made to the master would no longer be echoed there. However, how do we provide each new label with the information from its parent and what changes would occur when a label was removed from this hierarchy?

It would be wasteful to copy the information across into each new label as it was created, and updating the children when the master was altered would be a time-consuming business as the list of labels would have to be scanned and the changes echoed in every label in the set.

Instead, it would be better to link to the contents of the first label, either directly by entering a pointer to the master object's linked list in that of the child label or, in a more abstract fashion, by calling a separate procedure to display the rest of the information after the main bulk of the label had been drawn. In this way, a change made to the master label would be automatically propagated throughout the list, without the application having to do a great deal of work.

In a situation where one label wanted to break free, the graphics and text elements of the master could be copied directly over to the new label and added to its own lists – it would then have a standalone copy of the master, and would be free to change, move or delete them as appropriate. Returning a label to the control of the master would be harder as we'd need to remember which fields were inherited; however, a simple flag as part of the text object would help us around that problem.

To sum up, all unmodified sections of the label would be stored as part of the master's description and everything else would be part of the child's. Considering the format of the master label again, it would be advantageous to be able to include fields as part of the master label description that were automatically copied over to the child as an editable field. In this way, it would be possible to create new labels with non-editable text strings alongside pre-positioned editable fields, again easing the process of data entry for the user.

The data structures that we are to use must be able to cope with a variety of scenarios, some of which I have outlined above. They must be able to deal with offspring labels being disconnected, changed and then reconnected to the master, and alterations made to the master should propagate quickly and seamlessly.

I hope I've been able to show that the format of the data structures has a profound effect on the shape of the application. That's all for this month, I'll see you next time. AU

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• RiscPC 600, 2 slices, ARM610, 486SX40 card, RISC OS 3.5, 16Mb+2Mb VRAM, 400Mb IDE HD, 230Mb external SCSI HD + interface, CD, AKF60. £399 delivered, no offers. Tel: 01822 616127.

• AKF50 Multisync Monitor, non-letterboxed modes 12,15 etc. on all machines. Max resolution 800x600. Only two years old, perfect working order. £100. E-mail: robin@arcstone.demon.co.uk or tel: 01323-509401.

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• A3000 RISC OS 3.1 2Mb ARM 2, 80Mb IDE HD. £160 Tel: 01623-824114.

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• Wanted.: Serial Card for connecting Modem to Serial Port for Acorn A3/4/5000. E-mail: gscott@argonet.co.uk or tel 01244-342806.

• Archimedes 440 (ARM 3, RISC OS 3.10), with NEC Multisynch II, software, magazines, books. £200 ono, or will split. E-mail: denis.collins@cableinet.co.uk

• 2nd slice for Risc PC (brand new but no power supply, backplane, etc) £30. 2-slot backplane for Risc PC £30. Phone 01745-886022 (North Wales).

• Risc PC 600, 24Mb RAM, 2Mb VRAM, 1.3Mb Hard disc, SCSI card, CD-ROM Syquest drive, 486 card, 14in monitor, Eagle card 3.7. £450. Tel: 01843-584598 (Thanet, Kent)

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• For sale: A4000, 80Mb hard disc, 2Mb of memory, keyboard, mouse, manuals, colour monitor, AKF30/40. £250. tel: 01384-873069.

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• A3000, RISC OS 3, 4Mb RAM, 80Mb HD, ARM3, Eizo monitor, Cumana CD-ROM drive, Impression, Artworks & other software, 93-98 Acorn Users. £300. Tel: 0181 462 0725.

• A3 Universal Concept keyboard with Acorn serial cable, cost £130, new and boxed, £85 ono. Tel: 01268-785184 (Essex).

• Aleph 1 5x86 100 PC card, 512K cache. Cost £350 new, 15 months old. Manual. £150. Tel: 0161-280 1013.

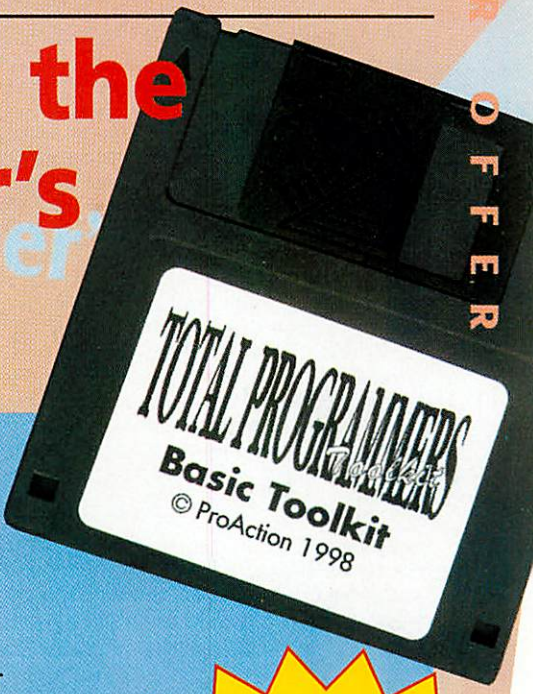
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# Rambl... Aco... Wo...

Another question a...
with Mik...

More musical mumbling this month, with some bonus software for users of the amazing MU10 MIDI sound module. It's called XG swap and allows you to send the bank change messages to coax more than the standard General MIDI sounds out of this amazing box. I wrote it to use with my sound square and the MIDI mouse software I gave you last month.

It does nothing more clever that look up the numbers for a particular voice and then send them when you click a button. In the end it became an exercise in creating enormous menus; I think there are around 640 different choices that can be made. Apologies if any of the instrument names are misspelt, but the list I printed from the PDF document was extremely small.

Which brings me onto the other great event of this month – I've had to get glasses for the first time in my life. I know electronic components have been getting smaller, but I found I couldn't read the pin numbers any more on a 25 way D-type connector – the type used on the printer port. I would recommend it to any reader who wants to upgrade to a 17 inch monitor without taking up any more desk space.

*Anyway, let's start off this month with some reactions about past topics. John Clack from Middle Reach, Isle of Wight has a follow-up to Chris Ward who wanted to get onto AOL (America On Line) with his Acorn:*

**As a Risc PC user I have an AOL account. I have asked their technical people and have been categorically told that one must use the AOL software, Mac or PC only. I contacted ANT, who said they would love to provide an AOL interface, but couldn't get any information from AOL technical support about the protocols. The AOL software does run with a PC processor but was slow and hung, and once it crashes it takes ages to bring the system back up again. I also found it a bit restricting in how you could save some of the pages but the contents were quite nice.**

**Now I have a BT Internet account and use a RISC OS browser (*!Fresco*) and am in the process of moving off AOL. I now have a fast browser that seems to cope with all the sites I've visited so far. It is brilliant in the way it lets me save pages and images for reading and editing later.**

**It is very intelligent in the way it understands URLs and links; it integrates in the usual seamless way with the rest of the Acorn system. And of course, should it abort, it is reloaded in seconds rather than minutes and hardly ever brings the OS down. I would expect the same from most other Acorn browsers (read *Acorn User* for reviews).**

A couple of months ago John Penton was having trouble getting an IIC interface to work, well it finally got sorted out. John was being led astray by a misprint in the December 95 *Acorn User* where the pin numbers for the clock and data lines were swapped around. Just to reiterate, these are on the podule connector and are 19c clock and 20c data with the power coming from 1a – 0V, 32a – 5V. Sorry John.

*Next, Andrew Harmsworth from Warwick School is tempted by the NASA CDs I recently talked about. He says:*

**Just read your Rambles from July. I'm sure that you're already aware that Spacetech have PDS software although, obviously, they charge for it. How easy is it to get hold of the NASA CDs that you mention? They would be really useful for our school.**

Thanks Andrew. I do know about the Spacetech software but unless it has been upgraded, it will only run in a 256 colour mode. That means there are only 16 shades of grey, there is a further problem in that these images are in 16 bits of grey scale and this software simply won't touch that.

The discs are very easy to get hold of especially if you are on the Internet and have a credit card. Contact http://nssdca.gsfc.nasa.gov or e-mail request@nssdca.gsfc.nasa.gov

I am told, however, that it can take quite a time if you want to order multiple copies in order to sell on – I suppose they are not too keen on that.

*Beverly Hart, a class teacher at Berengaria Primary school for Forces children in Cyprus, is having trouble with her floppies, she writes:*

**All our schools have A5000 machines and our floppy discs are supplied via the Military Stationary Dept. We have a very high failure rate with our discs, particularly disc error 22. We do not have sufficient hard disc space to save all the children's work and they continue to lose data. What is disc error 22 and why is it so frequent? Is there an Acorn disc fix program available so we can fix the problem and hopefully retrieve data?**

Disc error 22 is a CRC data error which stands for Cyclic Redundancy Check and is a check of the integrity of the data being read off the floppy. You see, when data is written onto a floppy, each byte is added to a check sum and the result of that sum is tagged on the end of the data. Then, when data is read back, the computer recalculates the check sum and sees if it is the same as when the data was written. If not you get a CRC error.

It might just be that there is only one bit out of one byte wrong or it could be more, so the computer just stops the whole of the read. As you are getting a lot of these there could be a problem with the quality of the discs you are being supplied with. Have you noticed the same problems with discs from other sources?

However, it could be a problem that you introduce through formatting. If you format a high density disc to double density, or the other way round, you could well experience the same problems, that is, it works all right at first but quickly fails. This is because the two types of disc have different types of magnetic coatings and so require different amounts of magnetic field to write to them correctly.

Too little or too much field will both result in unreliable operation. If the disc has two square holes (even if one is covered up) it is a high density disc and should only be formatted as such. One hole indicates it is a double density disc and should only be used for the 800K or so disc formats. If the discs you are being supplied with are pre-formatted PC discs, you might like to try wiping them on a strong magnet before reformatting them to use with your Acorn machine. This would remove any residual traces of the old track markers that might be giving you trouble.

However, once you have a faulty disc there are steps you can take to recover the data on it. There are several such utilities about but the one I have used is by LOOK Systems (Tel: 01379-608585) called *Disc Rescue*. You are not guaranteed to be able to recover the data but there is a good chance depending on where the fault is. Once the data has been recovered throw the disc away and don't be tempted to reformat it as the problem will almost certainly reappear.

*Next, Steve Burke would like to increase his programming skills, he writes:*

**I would like some advice about programming languages. I have an A7000+ with Basic V and Basic64. I am interested in going on a training course to learn about the modern computer languages. I have been advised that one of the languages I will be working with is Visual Basic.**

**All the manuals that I have located so far are aimed at Microsoft products. Can I learn Visual Basic on my A7000+? If I buy a BBC BASIC manual will it be at all relevant to my task of learning Visual**

# es through orn ood

nd answer session

ke Cook

**Basic? What machine do I need in order to use Visual Basic?**

Sadly, I think the answer here is a 'proper' PC. The last time I investigated this, even a Risc PC with a 486 processor wouldn't run Visual Basic. A BBC BASIC manual is not going to help you much as, while at the lowest level the statements and syntax are similar, they soon depart when you consider structures, graphics and user interface.

*Richard Harker has been rooting around my past articles on the Internet and writes:*

**Unfortunately there wasn't anything there that I was looking for. Would you consider covering an interface to control a Lego robot or model railway in your 'Run the Risc' series?**

**The sort of interface that I would like is something with about eight outputs and four inputs. The interface would possibly be complete with an integral PSU so you literally just had to connect the motors and go, with no need for batteries.**

**If it had an integral PSU, then a switch to switch between some various voltages would also allow it to be used with different things, for example a railway is 12V, Lego is 3.5V old style and 9V new style. Also, being able to reverse the polarity of each output individually would be very useful as well. Anyway it's just an idea that I thought you may like to consider. I would set about designing one myself, but my electronics knowledge is quite limited.**

While there is no single design that meets your specification, all the requirements can be met with a careful cut and paste from past projects. So let's see how.

First of all, eight outputs – you just need the printer port, four inputs – how about the PUP interface in October '96 *Acorn User*? Next for some motor drivers – that's in the April '91 *Acorn Computing* as Body Build 92, it's also on the website. The chip it uses has a push/pull output that means it will output whatever polarity you program it to, without having to switch anything over.

Also look out for December '92 *Acorn Computing* for how the Lego light brick works. Finally, the power supply. These can be a little pricey to build and, as you are dealing with mains, you need to keep an eye on safety. Therefore why not go down to an electrical shop and get one of those switched battery eliminator supplies? As a finishing touch, put it all in one big box with some LEDs on to indicate the on/off state. With a tri-colour LED you can even see the polarity of the output.

*Richard Davis, a keen Terry Pratchett fan and a student on a very tight budget, has an interesting idea:*

**I want to build a network. I have an A3010 and an A4000 which I would like to connect with a network that can run TCP/IP. The first way I thought of to do this was to connect the machines by their serial ports with a null modem cable, but this then leaves nowhere to plug in my modem.**

**Another method would be to fit expensive ethernet cards to both machines, but this would leave my A3010 without a hard drive, as it is currently fitted with an HCCS Ultimate Expansion System which has an IDE hard drive connected to it.**

**The parallel port is out of the question as well as my A3010 has a SCSI adapter and a printer already connected to it. The only ports which are on both computers and have nothing connected to them are the user ports. Is there any way that a TCP/IP stack could be run over a user port? Preferably the 'Freenet' TCP/IP stack written by Tom Hughes, as I already have this and it has all the features I need for such a network.**

Sounds an interesting project. In theory there is nothing to stop you using this, as with the right sort of software you can get bi-directional communications at quite a rapid rate. It should be just (OK then – JUST) a matter of writing a small piece of code and then slotting it into the system.

TCP/IP protocol is designed so that the physical layer is independent of the layers above it and the only impact it has on the higher layers is the speed. This is why radio amateurs can run computer networks on VHF radio transmitters without using the telephone at all – it's known as Packet Radio.

Unfortunately British legislation stops these networks being connected to the Internet but they do it in the U.S. There are several programs on the Acorn platform that use this system – maybe you could look at some of those as well. I have included a fairly old list of these on the cover disc. If you do get your network up and running be sure to let me know – there may be others interested in it.

*Piers Wombwell has another idea for a project:*

**Many years ago, I remember reading one of your Body Building articles about controlling a TV from your BBC B. Having got rid of all our old *Micro User* magazines years ago, I was pleasantly surprised to find a copy on your Web pages (BB 106).**

**I would like to control my VCR remotely by sending VideoPlus codes as DTMF tones down from a remote phone. I have a Pace 56 modem, which recognises the DTMF tones, and writing all that software is pretty easy.**

**However, I was wondering if you have a copy of the BBC B software to receive and transmit IR codes – it's not on your Web pages. I plan to control the LED from my parallel port on my Risc PC, but having a bit of code to base the 32-bit rewrite on would be useful.**

Actually it is on the Net, it's on Disc 5 of the old software accessed from the Body Build index page, but I have also slipped it onto the cover disc for you to see. However, I am not too sure it will help you. The reason is that it works rather like a one bit sound sampler – the data stream from the remote controller is first recorded and placed in a file. Then that file is played back into a modulated IR emitter diode so the software knows nothing about the data it is sending.

You could use last month's sound sampler software as a more relevant reference. If you don't mind taking up seven times more space for the sample than needed, you could even use the code directly. What you really need however is this month's logic oscilloscope and some hardware to analyse the data from your normal IR controller. Then you can write more efficient code to shine at your video recorder. I'm not saying anything, but hang around for next month and there might be something along just those lines.

*Finally, here's something I don't know. As usual it's about printers. Greg Hardham is a curriculum consultant with the Victorian Department of Education in Australia, and is having a problem with a printer:*

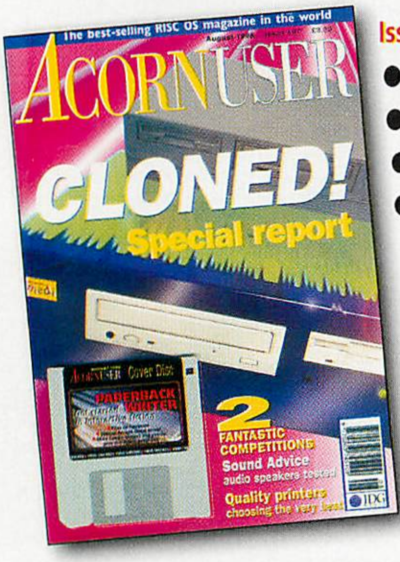
**I am helping a school in setting up a Lexmark 4037 5E printer to their Acorn Risc PC 600 (1994 model). Is this humanly possible? I have tried getting advice from everywhere but am still unable to get the printer to work.**

**Technical support for Acorns in Australia is very thin on the ground. Lexmark's advice is that it should run on a HP II or later driver, but it doesn't. Advice from EastWest in Melbourne was to get *Printers* Version 1.53 (the school has V1.28 I think). The Lexmark runs as either IBM PPDS or PCL4 modulation.**

Any readers got any suggestions or advice?

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# LETTERS

## HTML reply

Having read the HTML authoring article in the July issue of *Acorn User*, we were a little concerned about the several factual inaccuracies in the coverage of *HTMLEdit Studio*. David's biggest criticism of the software appeared to be what he thought was the Table Editor's lack of cell alignment on an individual cell basis.

This is, I'm afraid, completely incorrect. WebTable has a large "centre" button on the toolbar (one of only 10 buttons!) which alters the alignment of the current cell, a selection of cells, or a whole row, depending on which selection is made. This behaviour has been present since release 1.00, 18 months ago.

What may have confused David is that the menus also allow for row alignment <tr align=""> as a shortcut to save the user's time on the row sub-menu. This syntax has been valid since the HTML 3.0 draft specs two years ago, and helps produce much tidier HTML, something which is fundamental to *HTMLEdit Studio's* design philosophy. It is supported by all browsers and is present in the current HTML 4 SGML DTDs – which formally define the HTML language.

Our decision for Framer to produce percentage values as opposed to pixel widths was to prevent users new to frames from producing pages, which might cause problems for their viewers. At the time this decision was made, most Windows users still ran at 640x480, while Acorn owners were running at higher resolutions. We could easily envisage fixed width frames causing problems for said Windows users, while percentages will accommodate for the viewer's screen resolution.

This argument may be less valid now, but the comments that "Framer and WebTable appear to have been written by someone with little knowledge of HTML" is not only insulting, but incorrect.

**Andrew Rawnsley**
**R-Comp**

**David Matthewman replies**: *Let me start with an apology. R-Comp are completely correct about the three alignment buttons on the tool bar and, what's more, I remember using them in earlier versions of WebTable, so I'm not sure why I forgot about them. I do feel the menu is a bit confusing as it only allows you to align on a per-row basis, but WebTable does indeed allow aligning on a per-cell basis as well. I'm sorry I suggested that it didn't.*

*It's very laudable of R-Comp to persuade people to use percentage values but to stop one using pixel values altogether seems lunatic to me. I don't always want to use percentage values. Suppose I have a button bar, with buttons 100 pixels wide. The frame or table cell is never going to want to be smaller than 100 pixels, because you'd obscure the buttons, and it's never going to want to be wider than 100 pixels because you're just wasting space. So why not make it 100 pixels? Because the Web Designer's Toolkit won't let me, that's why.*

*As for the sentence that so 'insulted' you, if you're going to take offence at something, try to read it correctly first. My copy of Acorn User (and presumably everyone else's) has the somewhat different sentence: 'They [Framer and WebTable] have the appearance of having been written as a "bare minimum"* ➤

## Showing the way forward

The Acorn Southeast Show took place on Saturday 27 June at Stevenage Arts & Leisure Centre, Stevenage, Herts.







With over 50 exhibitors taking part and a series of talks in the theatre, this was by far my biggest one-day regional Acorn show. Around 500 enthusiasts turned up to support the event, despite the bad weather.

It was very pleasing to see such a relaxed atmosphere and of course it was very satisfying and a privilege for me to be able to support both Acorn companies and users in South East England. A big thanks to all exhibitors taking part and also members of the Welwyn Hatfield Computer Club, who ensured that the show ran smoothly. My next show will be taking place on Saturday 28 November at The National Motorcycle Museum, Birmingham.

**John Stonier**
**acornshow@argonet.co.uk**

# LETTERS

*implementation by someone not entirely familiar with tables and frames'. I stand by what I said.*

*They have this appearance to me and your reasoning on the percentage/pixels debate only strengthens my belief. There really don't seem to be any vertical alignment controls, and I for one find this just as important as horizontal alignment when constructing tables. Few of the more complex frame and table attributes are supported (cellpadding? marginwidth? full border control on frames?).*

*I feel that WebTable and Framer let down an otherwise good suite of programs. If you find this insulting, then be insulted, but hurt pride never improved a product yet in my experience.*

## Mix and match

Why don't Acorn take the yellow front panel of Phoebe one stage further by taking a leaf out of Nokia's book and have interchangeable front panels?

Bad idea? Not so. Just think, each school can have their own shield emblazoned on the front, companies could have the machines in their corporate colours and the rest of us could choose from a range of standard colours or designs.

Snazzy, or what!

**Dave Francis**
**davidf@amberroom.prestel.co.uk**

## Dream on

I had a dream last night.

I dreamt that Acorn had perfected their Galileo operating system and that it was even better than RISC OS. It was backward-compatible and everyone was using it on their Acorn computers.

I dreamt that Acorn produced a disc-based version of Galileo which would run on a standard Pentium-based PC and sold it at a rock-bottom price, bundled with a lot of useful application software. I even dreamt that they ran a marketing campaign, promoting it as an alternative to existing operating systems.

I dreamt that a lot of people bought it out of curiosity and to see if it could free them from the clutches of Bill Gates. I dreamt that they used it on their PCs, knowing that they could always reboot Windows whenever they needed to, though they experienced a kind of let-down feeling whenever they did as Galileo was so much easier to use.

I dreamt that major software houses began converting their products to run on Galileo and discovered that people bought them because they needed less RAM and hard disc space.

I dreamt that the software houses then discovered that their products would run even better and faster on a StrongARM-based machine with its ROM-based operating system and began recompiling them for the StrongARM. This was easy to do because all the SWIs were the same.

I dreamt that the world had finally woken up to Acorn computers. But instead, *I* woke up.

**Martyn Fox**
**E-mail: mfox@argonet.co.uk**

# Is the price right?

I dared to read a PC magazine quite recently and it had a small article on the Acorn Risc PC. It said that the main reason it didn't catch on is that it was too expensive. Although I realise that the more a product is bought, the cheaper it gets, Acorn need to do something about the price.

Only now in light of the new Phoebe are the Risc PC prices beginning to drop, but good ones are still around £1500. You can get advanced PCs (if there is such a thing) for around half that price.

I agree that advertising will get Acorn realised as a serious company, but lowering the price is likely to get a much better result. With Acorn using one of the cheapest, most powerful processors in the world, surely they can do something about the final price? Although I obviously don't want to see people prevented from buying a Phoebe for lower prices.

On another note to do with cost, why are five year old games still around the same price they were to start with? I wouldn't mind buying some old games for my A3010, but £30 is ridiculous. Obviously they are cheaper second-hand, but if 4D still have copies of *Chocks Away*, they will never sell it for £31! Is it just that the Acorn market is too small?

**Jamie Wilson**
**j_wilson@whouse.u-net.com**

*One of the facts of business life, often missed by start-up (and fast vanishing) companies, is that by halving the profit on a product you have to double the sales to get the same result.*

*You can be sure that Acorn have priced the Phoebe 2100 carefully balancing their costs, and the need to re-coup development costs, against predicted sales. And there's no competition in the Acorn market to drive down prices even further.*

*Added to this equation is the discount given to the various dealers, no matter how small that may be Acorn's profit and pricing has to be calculated on the discounted cost, not the cost to you, the buyer.*

*As for game pricing, if people are willing to pay then there's no reason to bring down the price – from a business viewpoint.*

## Re: Pricing up

I don't think Russell Scoates' reply to Paul Johnson's letter holds very much water. In his opinion larger dealers like Dixons have more purchasing power and can pass their savings on to the customer.

However, small PC dealers, as well as offering much better service, seem to undercut the large chains by a large margin and are even cheaper than large mail-order dealers such as Watford Electronics.

He points out that dealers also have to charge for support, but isn't one of the advantages of Acorn supposed to be lower support costs?

**Tony Houghton**
**tonyh@tcp.co.uk**

## Altered e-mail

Thanks for publishing my letter about *!Wizard* and *!PCPro* in the August issue. Between writing and publishing I have changed my e-mail address to john@jpurser.demon.co.uk

**John Purser**

## Driving me mad

I've just about had it with printer drivers. In the June '98 issue of *Acorn User* the article on printers made it quite clear that if you want to utilise the optimum capacity of your printer, then look to a PC.

The abhorrent suggestion posed to get something out of your HP680C is to play around with a 660 driver! In short, any excellent features such as photo-quality output is a realm beyond Acorn accommodation.

This is appalling. Are Acorn users really going to put up with such perfidious and prejudiced treatment? Isn't there someone out there who can make a good job of coming up with Acorn drivers to harness the full power of the latest printers? I wish I could!

It's truly amazing how an incredible machine can be bogged down with these senseless complications and predicaments. No wonder so many potential buyers have been swayed to "the dark side of the market". Let's do something about it, and fast!

**William Simpson**
**Lincoln**

*You'll be happy to know that the next version of the printer drivers – presumably to be released at the same time as the Phoebe 2100 – will have photo-real capability.*

## An advertising opportunity

For a long time I have complained about the lack of advertising in the Acorn market. No one is going to buy your goods unless they get to hear about you! I decided I would try to "do my bit" and did a little negotiating with the Editor of the North Kesteven School Newspaper, Mrs R Tilley. She has agreed to allow anyone interested in showing off their Acorn products to advertise in the school paper for extremely inexpensive and negotiable rates.

The NK Newspaper is freely distributed among its pupils every school half-term, reaching 1300 families, and has already been advertised in by companies such as the Danwood group and De Montfort University.

If anyone is interested, contact Mrs Tilley at the school on 01522 -881010, who will be glad to send you an information pack with further details. Give it a try, you could find it worth your while.

**William Simpson**
**Lincoln**

## Anti-Acorn?

I recall reading in a recent *Acorn User* a complaint that the Internet software available for Acorns is lacking in bells and whistles compared to other platforms' offerings. I feel a need to set the record straight.

Ever since going online I have been plagued with poor, unstable links that have prevented me from downloading large files or fossicking endlessly round the Net. After a lot of investigation, it appears that I may have an obscure fault in my modem, which passes all the usual tests but seems to commence producing exponentially increasing errors after some minutes of downloading.

I am using the *ANT Internet Suite*, and I have to say that not only do they supply as standard an outstandingly useful set of diagnostic tools that seem to be unmatched on the well-known American platforms, but they really stand behind their product.

Their Mr Ian Richardson has been most patient and helpful in diagnosing the problem (aided by ANT's excellent logging system), and has supplied a software fix that now allows my system to crash through a veritable blizzard of errors. While I may prove to have been suffering from a dodgy modem, there seems no doubt that the same fix can probably "cure" bad phone lines – if you have such things in the UK.

My conclusion is that, notwithstanding your earlier correspondent's remarks about what's available on our favourite platform, the users of Acorn computers can buy the *ANT Internet Suite* with confidence, secure in the knowledge that they will stand behind it. That counts for a lot, and is certainly much appreciated by this customer of theirs.

**Michael Poole**
**New Zealand**
**pooleprm@kapiti.co.nz**

## Course to complain

I have just started a new job working for a well-known banking organisation in their IT department at head office. Unfortunately I have to use PCs running Windoze. As a result I had to attend the compulsory IT training courses showing the new recruits how to use Windows '95, '98, NT and the rest.

I was amazed to discover how little the PC owners knew about their computers. None of them seemed to understand the concepts of multi-tasking or image filing systems. The tutor tried to point out some of the new features that were brought to the PC platform with Windows '95, the list included: A desktop area, an image filing system, task swapping and more features activated by the right mouse button.

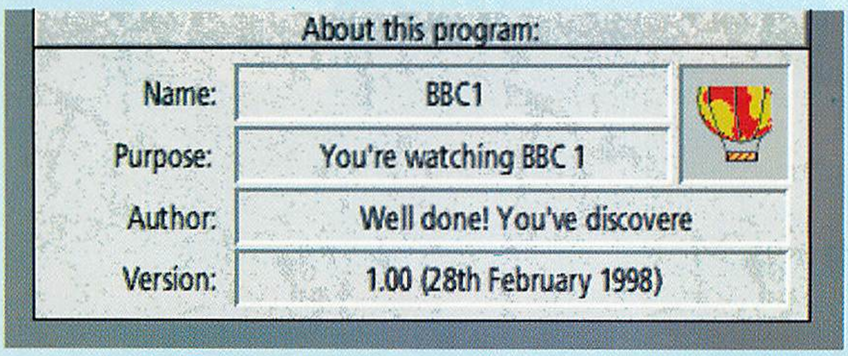
This made me realise how lucky we Acorn users are. We have had all these features (and three mouse buttons) since 1987 when PCs only had DOS. I mentioned this fact to the tutor who replied "Acorn. Didn't they make the BBC Micro"?

I have tried to convert these brainwashed people who think that constant crashing and memory hungry systems are the norm to Acorn RISC OS by pointing out some of the features of the forthcoming Phoebe 2100. Their advice to me was to save my money and buy a PC. You just can't help some people.

So just remember how lucky you are to be using the best OS in the world.

**Howard Thompson**
**hgthompson@mossoft.demon.co.uk**

## More on BBC




I have noticed that when on *!BBC1* (*Info – August issue) you press Menu on the BBC balloon, open the Info box and click with Select on the balloon icon on the info window you get a scrolling text message. I have included a picture.

**Andrew Simpson**
**andy.simpson@argonet.co.uk**

### Air your views

If there's something you want to 'get off your chest' or you have some interesting information for your fellow *Acorn User* readers, then write in to:

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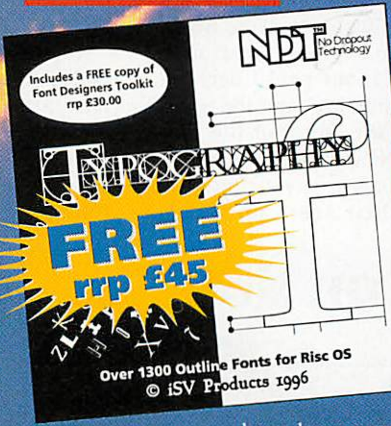
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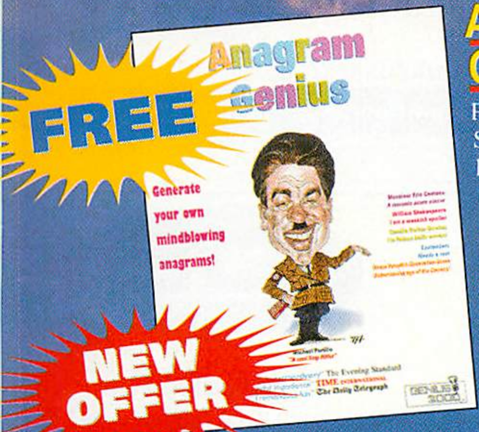

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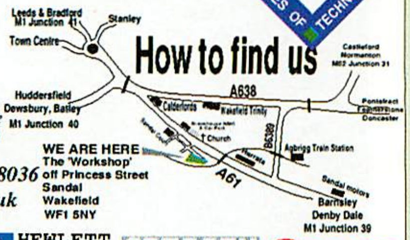
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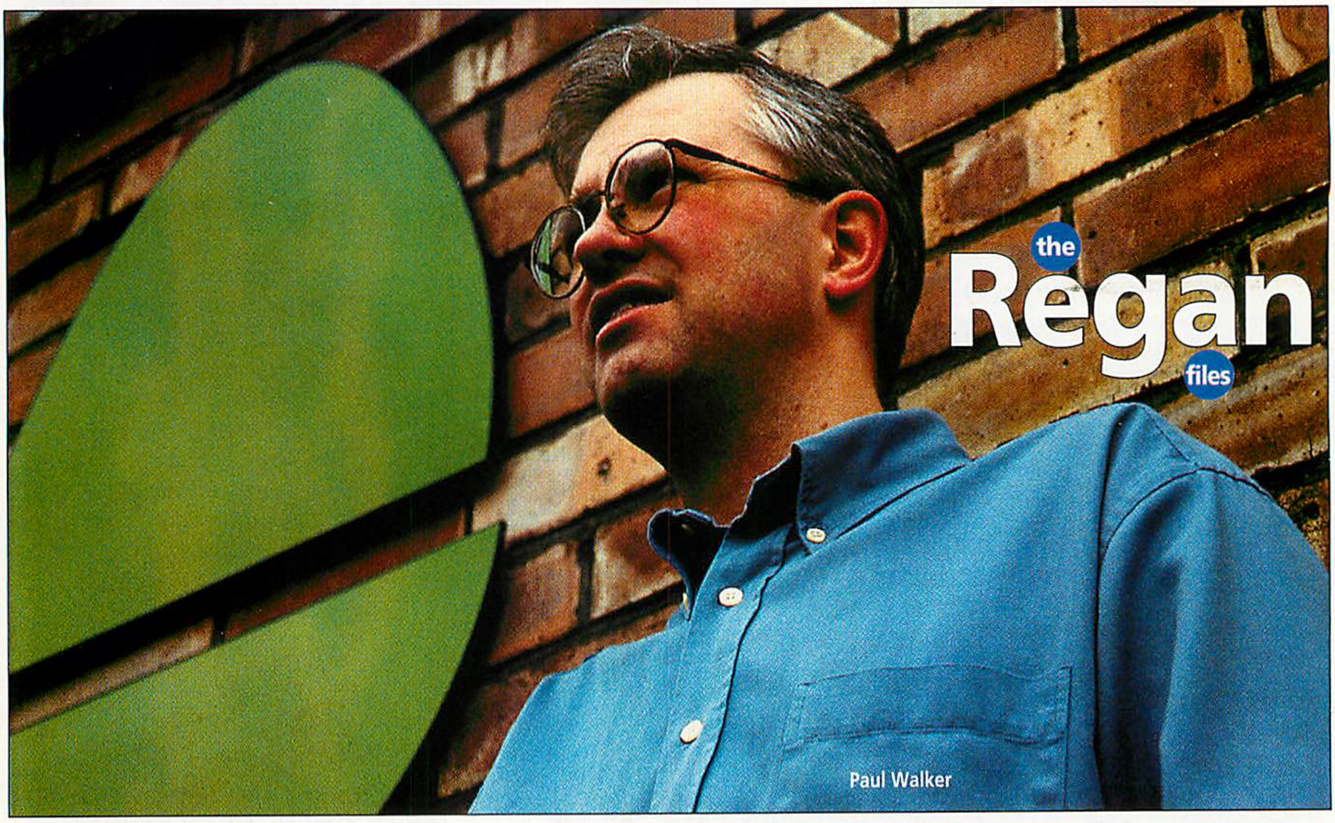
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# the Regan files




Paul Walker

One of the amusing things about clichés is how easy it can be to find exceptions to them. Take, for example, the cliché of a 'born salesperson', this is something of a fallacy when you are selling to an educated customer. For this you need good product knowledge as well as an understanding of your clientele and the ability to communicate your knowledge. This does not come free with your genes.

Paul Walker is a good salesperson. I found him in action at Desktop Projects, which he runs with his partner Alun Rogers. 'He is a master' claims one of his customers – Desktop Projects were also voted *Acorn User* Dealer of the Year.

I interviewed Paul at what is always a telling time for dealers. Acorn have announced and shown a new product, Phoebe, which you cannot yet buy so the market is slow.

'I do think Phoebe is a good thing', starts Paul. 'It is good for the home market, whether this be business or enthusiast, plus it gives Acorn a platform to show off their technology to worldwide, third-party interests.

'There are problems for a business waiting for Phoebe. In the Acorn market, the model you mostly sell is the top model and so if something new is announced then people will sit and wait. In the PC market you can announce a new computer and 80 per cent of people will still buy out-of-date stuff.

'I am glad that we have never been an education dealer. I resented the education dealers because they always got a better margin than us. It was quite interesting that it paled into insignificance when they had a shake up, and some people always lost out.'

Paul does not come from a computing background. He started in the building services engineering sector and did not come into contact with computers until he was at college – as he puts it: 'We barely 'ad calculators at school.'

Paul's computing lecturer was not very good and Paul was horrified that he was having trouble getting to grips with computing, because computers were up and coming.

So, on the advice of engineers he worked with, he gave up his secure job and went to Newcastle Poly as a mature student (after getting over his fears that it would be a place full of academics) to get a degree to become a chartered engineer.

> I'm a workaholic with a passion for the Acorn product

'At Poly I had my first affair with a BBC Micro and from then on there was no stopping me. I'm a workaholic with a passion for the Acorn product. Being an engineer I look at a machine from Acorn and see it as a feat of engineering.

'Psion are like that too, you pick their products up and from an engineering point of view they are pure. When you look at a PC it is broken and just a mess. I think it is very sad that it is the dominant computer.'

Paul finished his degree, but was disillusioned with the engineering industry. It was in the middle of some of the strongest Thatcher years, and all that mattered was the lowest price when tendering for a contract. Paul believes that you can never get anything of use for nothing.

'I was always passionate about Acorns and fancied my own dealership. In 1991 I took the plunge and created DTProjects. We started in these premises and so we have always had this large space.

'I don't mind people working from home, so long as they evolve and move on to actually become commercial. At the end of the day you have to think about how customers perceive you. If you're perceived to be a cottage industry, then you're never going to be taken seriously.'

Paul seems to have a view on most things. A future in politics is ruled out on the grounds he is not diplomatic enough, but this lack of diplomacy does make a good straightforward salesman. His belief in Acorn is of almost religious proportions. If Acorn shut tomorrow he would still buy an Acorn machine, because he knows he would easily get more than his money's worth.

You also never quite know where a conversation with Paul will end up. He jokes that he's getting older and his mind wanders; he has too many things going on in his head. In the middle of the interview I found myself discussing punk music – Paul wasn't into it at the time.

'It's funny that the music at that time seemed radical and naff with no character, yet when you listen to it now, it actually sounds quite sophisticated. Some of the songs are pretty timeless. I do not think the music of today will stand the test of time.' Either that, or Paul really *is* 'getting old'.

**Jill Regan** AU

# PHOEBE 2100

## Order your Phoebe now with just £100 deposit!

**Min spec:- 233Mhz SA, 32Mb Simm, 4Mb Vram, 6.4Gb HD, x32 slot CD. Final Price:- £1499 ex vat (no mon) or £1649 ex vat with Iiyama 15" mon. 'Phone for P/ex on RiscPCs. Phone Pineapple for details of some super Phoebe offers - Pay on 0% no deposit finance!**

## *New Acorn Computer prices and deals for Clan members!*

*Basic models* **- SRP20, 1.2HD, 4Mb - £ 825 inc vat. SRP21, 1.2HD, 4Mb, x8CD - £ 839 inc vat**

*Trade in deals (trade-in any other computer)* **SRP26A, 1.7Gb HD, 10Mb, x8CD - £ 949 inc vat**

**SRP41 1.7Gb, 34Mb, x24CD, Java - £ 1049 inc vat**

***The above computers can include a DX4-100 PC Card or an internal modem (28k) for £58.75 extra. (586-100 PC Card at £88.12)***

## *Special Pineapple Computer price deals*

*Deal 'A'* **233Mhz SA, 1.2Gb harddrive, 2Mb video memory 36Mb simm memory, x8CD - £ 929 inc vat**

*Deal 'B'* **233Mhz SA, 4.3Gb harddrive, 2Mb video memory 36Mb simm memory, x32CD - £1129 inc vat**

*'High Spec'* **233Mhz SA, 4.3hd, 2Mb vram, 36Mb simm, x8CD, 586-100 PC Card, PCPro & PC Exchange, Windows98, 15" digital monitor, 120 watt speakers - £ 1699 inc vat**

***Monitors when bought with any computer:- 14" Digital £99, 15" Digital £ 149, 17" Digital £ 269***

***All computers are supplied with Studio 24 v1 software and one years subscription to the Virus Protection Scheme.***

***New Acorn finance. 0% no deposit finance payable over 6 months. Please 'phone and ask for details***

### General Upgrades

**Harddrives - (p/ex for new RiscPC 1.2Gb HD)**

| | |
|---|---|
| 1.7Gb Harddrive | £ 55.00 |
| 2.0Gb Harddrive | £ 65.00 |
| 2.5Gb Harddrive | £ 75.00 |
| 4.3Gb Harddrive | £ 99.00 |
| 6.4Gb Harddrive | £ 139.00 |

Other sizes available - please ask

**Backplanes**

| | |
|---|---|
| 2 slot backplane | £ 34.00 |
| 2nd Slice (inc 4 slot backplane) | £ 89.00 |

**Midi Card**

| | |
|---|---|
| MIDIMax II - Midi Card | £ 92.83 |

### RiscPC Memory

| | |
|---|---|
| 1Mb VRam | £ 69.00 |
| 2Mb VRam | £ 89.00 |
| 8Mb SIMM | £ 14.00 |
| 16Mb SIMM | £ 24.00 |
| 32Mb SIMM | £ 33.00 |
| 64Mb SIMM | £ 129.00 |

### PC Cards & Software

| | |
|---|---|
| DX4-100 PC Card | £ 229.00 |
| 586-100 (Acorn) PC Card | £ 329.00 |
| 586-133 (CJE) PC Card | £ 351.33 |
| PC Pro & PC Exchange | £ 49.95 |
| Windows 98 (Installed for you) | £ 79.00 |

### Monitors

| | |
|---|---|
| Acorn 14" AKF60 | £ 264.00 |
| Iiyama 17" 400 (S701GT) | £ 363.00 |
| Iiyama 17" 400 Pro !NEW! | £ 385.00 |

CTX mons have (3 year on-site warnty)

| | |
|---|---|
| CTX 14" Digital Scan | £ 139.00 |
| CTX 15" Digital Scan | £ 175.00 |
| CTX 17" .28 70Khz Digital | £ 299.00 |
| CTX 17" .26 92Khz Digital | £ 385.00 |

### Internet

| | |
|---|---|
| 56,000 Flex modem - Flash U/G | £89.00 |
| Acorn !Browse (CD only) | £39.99 |
| Ant Internet Suite software | £116.33 |



### Flatbed Colour Scanners

There are now a growing number of scanners which will work on RiscOS. The Epson GT5000 and the Plustek work on the parallel port so no extra interface is required.
All our scanner prices include Twain and Imagemaster software. SCSI scanner prices do not include the SCSI connecting cable. Studio24Pro instead of Imagemaster - just £30.00 extra!

| | |
|---|---|
| Epson GT5000 parallel | £239.00 |
| Epson GT5500 SCSI | £259.00 |
| Epson GT9500 par&SCSI | £519.00 |

NEW!!Plustek Optic Pro

New low price! £129.00

### SCSI Cards & Cables

| | |
|---|---|
| Cumana SCSI II Card | £175.00 |
| EESOX SCSI II Card | £145.00 |
| 50 mini 'D' to 50 Centronics | £16.00 |
| 50 mini 'D' to 25 'D' plug | £16.00 |
| 25 'D' plug to 50 Centronics | £13.99 |

### Switch Boxes

These are ideal for parallel port switching between a printer & scanner

| | |
|---|---|
| Parallel 2 way | £16.99 |
| Parallel 4 way | £19.99 |
| Serial 2 way | £19.99 |
| 25 'D' plug to 25 'D' plug | £4.99 |
| 25 'D' plug to 36 Centronics | £4.99 |
| Monitor+Keyboard 2 way | £17.99 |
| 15way HD to 15way HD cable | £4.99 |
| Male-male mini DIN keybrd cab | £3.00 |
| Mini DIN to 5 pin keybrd adptr | £1.50 |
| 5 pin DIN to 5 pin DIN keybrd | £2.50 |

Many other types also available please ask



### Hard Drives

Pineapples removable drive system is available for IDE and SCSI systems.

| | |
|---|---|
| IDE removable system | £19.00 |
| SCSI removable system | £25.00 |
| IDE or SCSI cable | £5.00 |

**Bare IDE harddrives**

| | |
|---|---|
| 1.2Gb IDE !!!! | £50.00 |
| 1.7Gb IDE | £99.00 |
| 2.0Gb IDE | £109.00 |
| 2.5Gb IDE | £119.00 |
| 4.3Gb IDE | £139.00 |
| 4.3Gb IDE (Cyclone 5.25") | £139.00 |
| 6.4Gb IDE | £179.00 |

**IDE Expansion**

| | |
|---|---|
| x4 IDE Expansion card | £69.00 |

**Bare SCSI harddrives**

| | |
|---|---|
| 1.0Gb SCSI | £119.00 |
| 4.2Gb SCSI | £219.00 |
| 6.4Gb SCSI | £299.00 |

**ZIP parallel port drives**

| | |
|---|---|
| Iomega parallel port ZIP drive | £149.00 |
| Iomega SCSI internal ZIP | £129.00 |
| Iomega internal IDE ZIP (for use with IDE expansion card) | £75.00 |
| 100Mb ZIP cartridge | £9.99 |
| Pack of 5 Zip Cartridges | £45.00 |

### Studio24Pro

'Many Acorn User front covers have been created from scratch using this program alone, concrete proof of the power of this creative tool'- *Acorn User Mar96*

**Now just ★ £99.00 ★**

Users note FREE update v2.16 is now available.



### PAL TV Coders

We now have two PAL TV coders available which allow the output of any Acorn Computer to be displayed on a normal TV or recorded onto a video recorder. Both models have S-VHS as well as standard video outputs. The VGA converter works in VGA and SVGA screen modes and is ideal for the RiscPC. Please ask for more info.

| | |
|---|---|
| VGA Converter PAL Coder | £159.00 |
| PLC/4 PAL Coder (mode 12,15) | £99.00 |

for A3020,A4000,A5000,RiscPC

Pineapples Virus Protection Scheme has been running for over five years and is still being updated with new viruses on a regular basis. New software versions are sent out to members every three months and the total number of viruses which can be removed is over 100.



**Joining fee just £28.20**

Inexpensive multi-user licences

***'If you're interested in virus protection, join the Pineapple virus protection scheme and buy Killer. Accept no alternative - 'Acorn User Feb 96***

***As an Acorn Centre of Technology Pineapple Software can help you with ALL your Acorn computer related problems.***



### Colour Printers

| | |
|---|---|
| Canon BJC80 - portable col | £233.00 |
| Canon BJC250 | £149.00 |
| Canon BJC620 - colour | £229.00 |
| Canon BJC4300 | £198.00 |
| Canon BJC4550 (A3) | £287.00 |
| Canon BJC5500 (A2) | £649.00 |
| Epson Stylus 200 mono | £139.00 |
| Epson Stylus 200 colour | £179.00 |
| Epson Stylus Colour 400 | £159.00 |
| Epson Stylus Colour 600 | £198.00 |
| Epson Stylus Colour 800 | £259.00 |
| Epson Stylus Colour 850 | £299.00 |
| HP Deskjet 690C | £259.00 |
| HP Deskjet 870C | £369.00 |
| HP Laserjet 6L (laser mono) | £279.00 |

### Other Items

| | |
|---|---|
| Acorn !Browse (CD only) | £39.99 |
| Acorn RiscCafe (JAVA)(CD) | £39.99 |
| RiscOS 3.7 upgrade | £58.75 |
| RiscOS3 PRM vols 1-4 | £99.95 |
| RiscOS3.6 PRM vol 5a | £29.75 |
| Sibelius Junior v3.0 | £55.00 |
| Sibelius 6 software v3.5 | £115.00 |
| Sibelius 7 Student v3.5 | £459.00 |
| Sibelius 7 software v3.5 | £940.00 |
| Acorn Netstation (Ethernet) | £351.33 |
| Acorn Netstation (Modem) | £351.33 |
| A7000 upgrade to A7000+ | £249.00 |

***We have many items in stock which are not shown in this advert. Please ask for anything you require which may not be shown. We also undertake repairs and upgrades to all Acorn computer models. Collection can be arranged if necessary.***

## Pineapple Software

***352 Green Lane, ILFORD***
***Essex IG3 9JS***

**Tel 0181 599 1476 Fax 0181 598 2343**

**email:- sales@pineaple.demon.co.uk**

**www:- http://www.pineaple.demon.co.uk**

**Terms:- All prices *include* 17.5% vat. Carriage £15 on computer systems. £5 on most other hardware. Other items free. Phone for quote outside UK.Official orders, cheques and all major credit cards accepted at no extra charge.**

***'Pineapple offer some of the finest and friendliest after sales support you will find' - Acorn User Mar 96***

**Why not come and visit us and see most of the Acorn range of computers and hardware. Monday - Friday 0900 - 1730 Saturday 1000 - 1700**

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# Epson Scanners

**Professional A4 flat-bed and film scanners**





- GT5000 - 24 bit colour, 300 dpi optical resolution, connects directly to bi-directional parallel port. **£284.06***

- GT5500 - 30 bit colour, 400 dpi optical resolution, connects to a suitable SCSI interface. **£366.31***

- GT9500 - 36 bit colour, 600 dpi optical resolution, connects directly to bi-directional parallel port or a suitable SCSI interface. Optional transparency adaptor available. **£718.81***

- FilmScan200 - 30 bit colour, 1200 dpi optical resolution, connects to a suitable SCSI interface. Scans 35mm slides and film, including negatives. Optional APS film adaptor available. **£542.56***

# Digital Cameras

**From the leading *independent* supplier**







- Epson PhotoPC 600 - 1024 x 768 resolution, 4Mb memory (expandable), LCD viewfinder, auto-focus, macro, 3x digital zoom.

- Olympus C420L - 640 x 480 resolution, 2Mb memory, LCD viewfinder, auto-focus, macro.

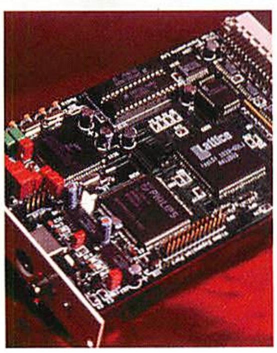
- Olympus C820L - 1024 x 768 resolution, 2Mb memory, LCD viewfinder, auto-focus, macro.

- Sony Mavica FD5 - 640 x 480 resolution, built-in 3.5" disc drive, LCD viewfinder, macro, high capacity Li-ion rechargeable battery pack.

- Sony Mavica FD7 - as FD5 above, plus auto-focus and powerful 10x optical zoom.

# 24i16 Multimedia Card

**Combined 24 bit digitiser and 16 bit sampler**



**24i16** combines an advanced 24 bit video digitiser with a stereo 16 bit sound sampler. As well as beautiful stills, **24i16** captures Replay movies and hi-fi audio samples. **£472.94***

- Captures brilliant still images from any S-VHS or composite video source, plus Replay movies, and hi-fi audio.

- 1Mb framestore captures still images at full PAL resolution, 768 pixels x 576 lines.

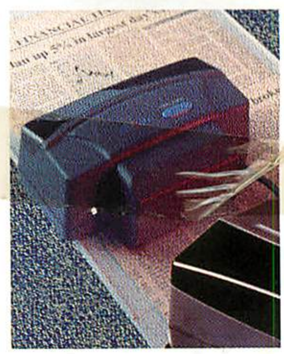
- Replay movies (including sound) can be recorded, image size and frame rate are fully adjustable and are limited only by hard disc and system bandwidth.

- Sound sampler records at sample rates up to 48kHz.

- Hardware video scaling and anti-aliasing, plus real-time control of brightness, contrast & saturation.

# Colour Mobile

**Motorised 24 bit colour hand scanner**



Presenting a very good reason not to buy a black & white hand scanner. **ColourMobile** is a motorised colour scanner that scans automatically, and works directly from bi-directional parallel ports, so you don't need a special expansion card. It also provides a pass-through port for printers and dongles etc. **£125***

- 24 bit scan head: 16.7 million colours & 256 greys.
- Resolutions from 100 to 400 dpi (interpolated).
- Scan width 104.6mm (4.12").
- Works with printers, dongles & CD-ROM drives.

*"Intuitive and remarkably easy to use... scans are outstandingly sharp with excellent colour accuracy... What more can I say?"* - Archimedes World.

*"The detail is impressive... this is a good scanner for schools and home DTP users."* - Acorn User.

For the Complete Picture...

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*All prices are for packages fully inclusive of hardware, software, delivery and VAT.
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